CRANFIELD UNIVERSITY

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Agile Supply Partnerships: The paradox of high-involvement and short-term supply relationships in the Macerata-Fermo footwear district

School of Management

Doctor of Philosophy
Academic Year: 2012 - 2013

Supervisor: Dr. Carlos Mena
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This thesis is submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy

ABSTRACT

Despite a general consensus concerning the relevance of supply partnerships to agility, the literature reveals disagreements and contradictions regarding their characteristics and, in particular, their duration. This is, whether partnerships in an agile strategy should be long-term (strategic partnerships) or short-term (agile partnerships). The research joins this debate by investigating the types and characteristics of supply partnerships to achieve agility. The underlying premise of the work is that the type of supply partnership is contingent on the degree of turbulence an agile strategy is designed to face.

The research was carried out in the fashion industry, given the relevance of agility in this industry. Specifically, the research focused the supply partnerships developed by the footwear companies in the Macerata-Fermo district, the largest footwear district in Italy. The focus on district companies allow the comparison of several companies sharing a very similar business context, allowing a better control of external variables and increasing the internal validity of the study.

The field research consisted of a preliminary survey on agility drivers and agile capabilities in the Macerata-Fermo footwear district, followed by an in-depth investigation on supply partnerships using multiple embedded cases studies. Overall six medium-large footwear companies have been analysed in their supply relationships with respect to five key supply categories. For each supply category, the buyer view of the focal firms has been complemented with a view from the supplier side. In total the fieldwork is built upon 30 interviews with 22 informants from 18 companies for a total of more than 23 hours of interviews. In all cases, except two, the key informant was owner, CEO or general manager of the company, eventually supported by another company manager. In two cases, the interviews data have been strengthened by a longitudinal analysis of purchase orders over eight years.

The fieldwork highlights that agility drivers and agile capabilities impact on the footwear companies' decision of developing agile supply partnerships. Specifically footwear companies that are under the pressure of high-turbulence agility drivers (here represented by a high collection renewal rate) and that have developed strong agile

capabilities (here represented by a local supply network and a purchase orders postponement) choose agile supply partnerships with respect to supply categories that are sensitive to the fashion trends and therefore difficult to be sourced in a stable way – season after season – from the same suppliers.

The main contribution to theory is related to the characteristics of supply partnerships in an agile strategy and specifically to the apparent paradox of "high-involvement & short-term" relationships (i.e. agile supply partnerships). In spite of the presence of time compression diseconomies in building up partnership and of the loss of relational (non-redeployable) benefits in closing down partnerships, scenarios of high-turbulence can give companies an incentive to look for short-term partnerships. Such finding can support a wider claim that different levels of turbulence call for different agility strategies requiring different capabilities and practices.

The main contribution to practice is related to the way agile partnerships are selected, started and ended. Given that many industries are facing an increase in market turbulence, it appears that many companies – even outside the fashion industry – might have to learn how to balance high-involvement supply relationships with respect to a shorter time horizon.

Keywords:

agility; relationships; buyer-supplier; long-term; systematic literature review.

ACKNOWLEDGEMENTS

I would have never started my PhD journey here at Cranfield without the encouragement of two persons who sadly are no longer with us: Alan Harrison and my father. I dedicate this work to them.

Also, I would have never completed my PhD journey without the great support given by my supervisor, Dr. Carlos Mena, and members of my panel, Prof. Mark Jenkins and Dr. Heather Skipworth. I thank them for all the inspiring advice they gave me.

I owe much to my family, my wife and my children, for all the time I subtracted from our life together. I promise I will compensate from now onwards.

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ASP	Agile Supply Partnership
HI-LT	High-Involvement & Long-Term [relationship]
HI-ST	High-Involvement & Short-Term [relationship]
SLR	Systematic Literature Review

1 INTRODUCTION

1.1 Aim of the study

Agility is centred on mastering uncertainty and change (Goldman *et al.*, 1995; van Hoek *et al.*, 2001; Zhang and Sharifi, 2007) and it is generally considered to be applicable to markets characterised by high volatility, intense competition, changes in customer requirements, accelerating technological change, and change in social factors (Christopher, 2000; Zhang and Sharifi, 2000; Lin *et al.*, 2006).

In an agile strategy, suppliers play an important role as they allow firms to access new resources so as to improve their performance in terms of responsiveness and time-to-market (Christopher, 2000; Narasimhan and Das, 2000; Brown and Bessant, 2003; Swafford *et al.*, 2006; Zhang and Sharifi, 2007; Khan and Pillania, 2008). However, despite the general consensus on the relevance of partnerships to supply chain agility, the literature reveals disagreements and contradictions regarding the specific characteristics supply relationships should have to foster an agile strategy. Some authors propose long-term partnerships (Yusuf *et al.*, 2004; Storey *et al.*, 2005; Zhang and Sharifi, 2007; Braunschiedel and Suresh, 2009), while other authors recommend short-term collaborations as current suppliers might not have the required skills or the requested availability in the future (Goldman *et al.*, 1995; Gunasekaran, 1998; van Hoek *et al.*, 2001; Christopher *et al.*, 2004). In view of such unclear evidence, this research aims to investigate the motivations and characteristics of supply partnerships in an agile strategy.

Given that the fashion industry requires agility due to its short life-cycles, high volatility and low predictability (Christopher *et al.*, 2004; Masson *et al.*, 2007), and also that fashion companies, in developing and producing their collections, rely very much on a wide supply network (Tran, 2010), this research focuses on the fashion industry for its empirical analysis of supply relationships. More specifically, this research has been carried out in the Macerata-Fermo footwear district, the largest footwear district in Italy. In 2010, 33% of the Italian companies working in the footwear industry were located there (overall 2,500 companies), with almost 24,000 employees (28% of the overall employment in this industry in Italy) (CCIAA Fermo, 2012).

The research investigates the motivations and characteristics of supply partnerships in the fashion industry focusing on the two following questions:

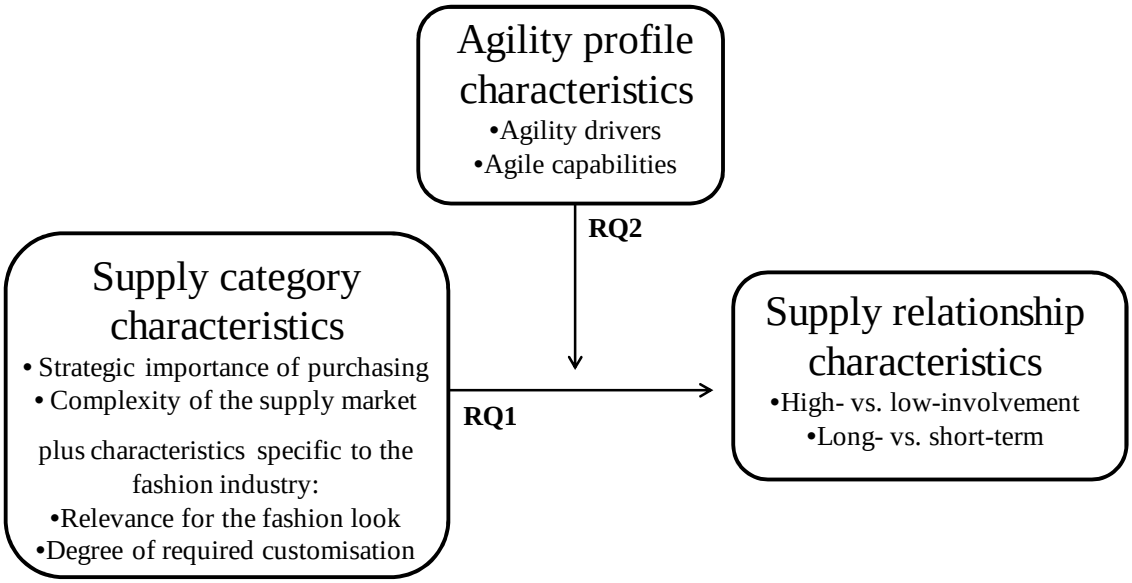
> RQ 1: How do fashion firms decide on the degree of involvement in supply relationships?
>
> RQ 2: How do fashion firms decide on the duration of supply partnerships?

RQ 1 looks at the decisions on the degree of involvement in supply relationships, taking into account the characteristics of the different supply categories and considering a continuum between low-involvement and high-involvement relationships.

RQ 2 looks at the decisions on the duration of supply partnerships, taking into account the different agility profiles and considering a continuum between long-term and short-term partnerships.

These two research questions are framed in the model represented in Figure 1.

Figure 1 - Research model



1.2 Structure of the thesis

After this introduction, the thesis is structured around seven additional chapters.

The second and third chapters represent the theoretical basis upon which this thesis is built. More specifically, Chapter 2 presents an overview on agility and Chapter 3 describes the systematic literature review carried out on supply partnership in an agile strategy.

The fourth and fifth chapters describe the research methodology adopted in this thesis. Chapter 4 presents the overall research design, including the philosophical perspective, the research questions, the operationalisation of key constructs and then the different phases of the research. Chapter 5 describes the context where the field research has been developed.

The sixth and seventh chapters are dedicated to the multiple embedded case studies on the approach to supply relationships developed by six footwear companies from the Macerata-Fermo district. Chapter 6 reports on the within-case analysis, Chapter 7 on the cross-case analysis.

The eighth chapter concludes the thesis summarising the contributions to theory and practice as well presenting the limitations and directions for future research.

The goal is to contribute to the theory of supply partnerships in an agile strategy, extending the literature on agility as well as the literature on buyer-supplier relationships. The research also seeks to contribute to the practice of supply partnerships management in the fashion industry as well as in all those industries where fashions trends are becoming increasingly important.

2 AN OVERVIEW ON AGILITY

2.1 Introduction

Agility has been promoted in the past twenty years as a strategy allowing companies and supply chains to face and profit from uncertainty and change in the market. However, agility, while well defined in terms of general principles, has not been very well described in terms of its implementation path.

To address this gap, this chapter will present and discuss different definitions of agility and then propose a framework for the design and implementation of an agile strategy. Given that the field research is carried out within the fashion industry, the framework is contextualised with respect to this industry.

2.2 Defining agility

The term "agility" was originally proposed at the beginning of the 1990s in the "*21st Century Manufacturing Enterprise Strategy Report*" by the Lehigh University's Iacocca Institute (Nagel and Dove, 1991).

Agility has been proposed as "*a comprehensive response to the challenges posed by a business environment dominated by change and uncertainty*" (Goldman *et al.*, 1995, p. 3) and the literature has always defined agility as an approach applicable to markets/products characterised by a fast pace of change in terms of market volatility, intense competition, changes in customer requirements, accelerating technological change, and change in social factors (Harrison, 1997; Sharifi and Zhang, 1999; Yusuf *et al.*, 1999; Christopher, 2000; van Hoek *et al.*, 2001; Lin *et al.*, 2006).

The agile approach aimed at facing uncertainty and change includes both reactiveness and proactiveness. "*The concept of agility comprises two main factors: (1) Responding to changes (anticipated or unexpected) in proper ways and due time; (2) Exploiting changes and taking advantage of changes as opportunities*" (Zhang and Sharifi, 2000, p. 496). This double perspective has been present since the very beginning, considering that the "*21st Century Manufacturing Enterprise Strategy Report*" was commissioned by the American Department of Defense to assess how the US could stop its manufacturing decline and regain a leading worldwide presence in manufacturing. The end of the

mass-production era was highlighted as a threat by those companies that were not able to change their processes and structures but as a great opportunity for those able to identify and serve the new needs of the customers.

Table 1 presents some definitions of agility, highlighting how it fits in with volatile markets.

Table 1 - References to uncertainty and change in the definitions of agility

Agility is a comprehensive response to the challenges posed by a business environment dominated by change and uncertainty" (Goldman *et al.,* 1995, p. 3).
"Agile manufacturing can be defined as the capability of surviving and prospering in a competitive environment of continuous and unpredictable change by reacting quickly and effectively to changing markets, driven by customer-designed products and services" (Gunasekaran, 1999, p. 87).
"Agility means using market knowledge and a virtual corporation to exploit profitable opportunities in a volatile marketplace" (Naylor *et al.,* 1999, p. 108).
"Agility is the successful exploitation of competitive bases (speed, flexibility, innovation proactivity, quality and profitability) through the integration of reconfigurable resources and best practices in a knowledge-rich environment to provide customer-driven products and services in a fast changing market environment" (Yusuf *et al.*, 1999, p. 37).
"Agility is needed in less predictable environments where demand is volatile" (Christopher, 2000, p. 39).
"The agile paradigm focuses on the need to deliver a variety of products with uncertain demand" (Stratton and Warburton, 2003, p. 184).
"Supply chain agility we define to be the ability of the supply chain as a whole and its members to rapidly align the network and its operations to the dynamic and turbulent requirements of the demand network" (Ismail and Sharifi, 2006, p. 431).
"Agility conveys the ability to efficiently change operating states in response to uncertainty and changing market conditions" (Narasimhan *et al.,* 2006, p. 443)
"Agility [can be defined] as a manufacturing paradigm, which focuses on the ability to change the configuration of a system in response to unpredicted and changing market conditions" (Bernardes and Hanna, 2009, p. 37).
[Agility is] "the ability to thrive and prosper in a competitive environment of continuous and unanticipated change" (Gligor and Holcomb, 2012, p. 295).

In order to successfully cope with uncertainty and change, agility has to be present at three different levels: "*individual (and other resources), enterprise and inter-enterprise [supply chain]*" (Yusuf *et al.*, 1999, p. 37). At the level of the individuals and of the individual resources, the importance of an agile workforce is recognised (Goldman *et al.*, 1995; Breu *et al.*, 2001; Vázquez-Bustelo *et al.*, 2007) as well as the importance of an agile manufacturing system – mainly based on factory automation and FMS – Flexible Manufacturing Systems (Goldman *et al.*, 1995; Christopher, 2000; Vázquez-Bustelo *et al.*, 2007) or of an agile information system (Goldman *et al.*, 1995; Weill *et al.*, 2002; Vázquez-Bustelo *et al.*, 2007; Huang *et al.*, 2012). At the enterprise level agility is recognised as an overall approach that goes beyond the agility of individual resources and "*embraces organizational structures, information systems, logistics processes, and, in particular mindsets*" (Christopher, 2000, p. 37). At the inter-enterprise level, it is recognised that agility can be fully achieved through collaboration among commercial partners or even competitors building up a virtual company (Goldman *et al.*, 1995) or across supply chain partners (Christopher, 2000; van Hoek *et al.*, 2001; Swafford *et al.*, 2006). These three levels are presented as a hierarchy, where the upper levels can be achieved only if the lower levels have already achieved agility (Yusuf *et al.*, 1999).

Within a turbulent environment, the key contribution of agility is the capability to manage product variety and product customisation – in contrast to a traditional mass market approach. The "enrich the customer" principle (Goldman *et al.*, 1995) highlights that an agile company should offer products and services that are perceived by the customers as "*solutions to their individual problems*" (Goldman *et al.*, 1995, p. 73). Similarly the "use of market knowledge" (Naylor *et al.*, 1999) as well as the "market sensitiveness" (Christopher, 2000) highlight that agility should be based on understanding and serving the "real" demand from the market, both in terms of product/service features and in terms of production planning and distribution scheduling. Table 2 presents some definitions of agility, highlighting how managing product variety and product customisation is a pillar of the agile strategy.

Table 2 - References to product variety and product customisation in the definitions of agility

"Agility is a comprehensive response to the business challenges of profiting from rapidly changing, continually fragmenting, global markets for high-quality, high-performance, customer-configured goods and services" (Goldman *et al.*, 1995, p. 4).
"An agile organization can quickly satisfy customized orders …" (Gehani, 1995, p. 29).
"Agile manufacturing can be defined as the capability of surviving and prospering in a competitive environment of continuous and unpredictable change by reacting quickly and effectively to changing markets, driven by customer-designed products and services" (Gunasekaran, 1999, p. 87).
"Agility is the successful exploitation of competitive bases (speed, flexibility, innovation proactivity, quality and profitability) through the integration of reconfigurable resources and best practices in a knowledge-rich environment to provide customer-driven products and services in a fast changing market environment" (Yusuf *et al.*, 1999, p. 37).
"Agility is needed in less predictable environments where … the requirement for variety is high" (Christopher, 2000, p. 39).
"The agile paradigm focuses on the need to deliver a variety of products with uncertain demand" (Stratton and Warburton, 2003, p. 184).
"Agility is derived from the three building blocks of relevancy, accommodation, and flexibility. … Relevance is the 'ability' to maintain focus on the changing needs of the customers', accommodation is 'the ability to respond to unique customer requests' " (Swafford *et al.*, 2006, p. 119).

Based on the characteristics previously highlighted, this research uses the following definition of agility:

> *Agility is the capability to effectively manage, in a turbulent environment characterised by uncertainty and change, a wide and frequently renewed product portfolio.*

Agility is a broad concept, so in order to define it, it is important to proceed not only in positive terms, by highlighting what agility is, but also in negative terms, by highlighting what agility is not. In particular, at the conceptual level, it is important to distinguish agility from flexibility and responsiveness (Bernardes and Hanna, 2009) while, at the implementation level, it is important to distinguish between the agile approach and the lean approach (Christopher, 2000; Gunasekaran *et al.*, 2008).

2.2.1 Agility versus flexibility and responsiveness

The term agility is often used interchangeably with the terms flexibility and responsiveness and "*it is not clear whether agility, flexibility, and responsiveness are synonyms or distinct concepts*" (Bernardes and Hanna, 2009, p. 31). For instance Zhang and Sharifi (2007) as well as Baramichai, Zimmers and Marangos (2007) mention flexibility and responsiveness as two key agile capabilities. Aitken, Christopher and Towill (2002) state that flexibility is a key characteristic of agility, highlighting that agile manufacturing was built upon flexible manufacturing systems. Ismail and Sharifi (2006) mention responsiveness as a critical element in characterising an agile supply chain. Gunasekaran, Lai and Cheng (2008) define "responsive supply chain" as a strategy that is developed based on agile manufacturing and integrated supply chain management.

Based on these syntheses of the operations management literature carried out by Bernardes and Hanna (2009) as well the specific contributions from the literature on agility (Christopher, 2000; Swafford *et al.*, 2006; Zhang and Sharifi, 2007), agility can be considered as a broader concept, given that flexibility is mainly concerned with the internal characteristics of a system (be it a company or supply chain) (Swafford *et al.*, 2006) and that responsiveness is mainly outwards oriented (Bernardes and Hanna, 2007). At the same time flexibility and responsiveness have to be recognised as two key capabilities qualifying the agile approach[1].

More specifically, agility is built upon flexibility, given that flexibility is the capability of individual structural and infrastructural resources to change according to predefined parameters (Slack, 1987). Moreover, all the types of flexibility (product, mix, volume and delivery), as defined by Slack (1987), are relevant to agility. However, agility goes beyond flexibility, implying the capability to respond even to unpredictable and unanticipated events (Bernardes and Hanna, 2009).

[1] Swafford, Ghosh and Murthy (2006) "*characterize agility as a capability and flexibility as a competency. Competencies are 'more localized production expertise, … that can be linked to a specific point in the VC [Value Chain]' while capabilities are 'broad-based, heterogeneous factors critical to business success' (Roth and Jackson, 1995)*" (p. 120).

Similarly, agility is very much related to responsiveness in those market circumstances where uncertainty and change are mainly related to product volumes and mix, without involving any challenge as to new product development. This will apply to all the three dimensions of responsiveness as highlighted by Holweg (2005): product dimension as to the point of customisation; process dimension as to the manufacturing and logistics processes; and volume dimension as to the distribution processes, as affected by demand variability.

2.2.2 The agile approach versus the lean approach

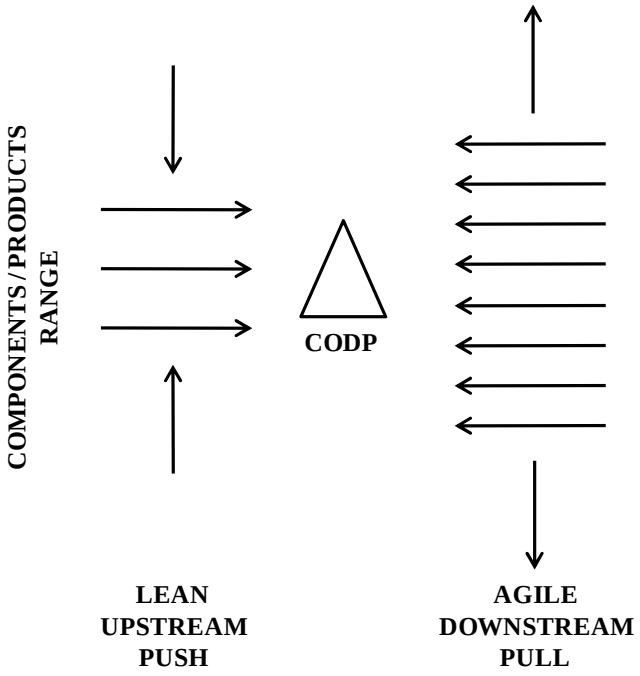
The agile approach, and in particular agile manufacturing, has often been considered as a development of lean manufacturing: "*[lean] programs laid the foundations of agility. An organization fat with inventory, slow to respond to customers and with a large rejection rate is not able to become agile*" (Goldman *et al.*, 1995, p. 342). However, agility is clearly different from leanness, given that the latter is mainly focused on eliminating waste, while the former is on managing variety and customisation. "*Agility should not be confused with 'leanness' … Paradoxically, many companies that have adopted lean manufacturing as a business practice are anything but agile in their supply chain*" (Christopher, 2000, p. 37). The lean approach is considered appropriate when building up a stock of finished products is not too risky for the company and, at the same time, it is able to satisfy most of the customer requests. However, when the demand is very difficult to forecast, or when the product variety is high, the rigidity of the lean approach appears too high due to the potential mismatch between demand and supply and the consequent high losses from stock-outs or mark-downs (Fisher, 1997). The agile approach aims to respond to markets "*where demand is volatile and the customer requirement for variety is high*" (Christopher and Towill, 2001, p. 236). Examples of the limitations of a lean approach in turbulent markets are the rigidities due to the "*lengthy 'frozen' periods [that] are a common feature of [lean] manufacturing schedules*" (van Hoek *et al.*, 2001, p. 139) and the high market risks related to the use of "*high levels of inventory being used to decouple the production system from variations in market demand, as is the practice of level scheduling*" (Stratton and Warburton, 2003, p. 185).

The agile and lean approaches have their own specific characteristics and, as already highlighted, appear to have a better fit with respect to different environments. However, beside their alternative use, the literature has been researching the possibility of their conjoint use in a hybrid configuration (Naylor *et al.*, 1999; Christopher, 2000; Mason-Jones *et al.*, 2000). Christopher and Towill (2001) identify the following hybrid strategies, mixing leanness and agility: separation based on the customer order de-coupling point (CODP), where the lean approach is used up to the de-coupling point and the agile approach beyond it[2]; separation based on the relevance of the product lines, where the lean approach is being used for the volumes lines/fast movers, while the agile approach is for the slow movers; separation of "base" and "surge" demands, where the lean approach is used to manage the forecastable items, while the agile approach is used for the less predictable elements. Similarly Stratton and Warburton (2003) highlight the possibility of using a hybrid approach thanks to the following separations: separation of opposite requirement in time; separation within a whole and its part; separation of opposite requirements in space; separation of the whole in parts. In the literature such a hybrid model is called "leagility" and is defined as "*the combination of the lean and the agile paradigms with a total supply chain strategy by positioning the decoupling point so as to best suit the need for responding to a volatile demand downstream yet providing level scheduling upstream from the marketplace*" (Mason-Jones *et al.*, 2000, p. 4065). The leagile approach fits with those cases where the final product can be assembled or configured based on a set of standard components where the lean upstream allows the suppliers to work with an efficient and streamlined flow, while the agile downstream allows the customers to receive the requested model, even when customised, in a very short time (Figure 22). The possibility of mixing lean and agile highlights even more the differences and specificities of each of these two approaches[3].

[2] The customer order de-coupling point (CODP) is the point where a production lot that previously had been planned as Make-To-Order is assigned to specific customer(s) and starts being managed as Assembly-To-Order (Gunasekaran and Ngai, 2005).

[3] For completeness, it has to be highlighted however that the agile literature is evaluating lean mainly with respect to "*a very narrow, production-oriented definition of lean, as opposed to the 'lean enterprise' definition suggested by Womack and Jones (1994) soon after their seminal work in 1990. In fact, many contributors, eager to point out the shortcomings of the lean concepts, still base their arguments on the early and limited understanding of lean thinking prevalent in the western world in the early 1990s*" (Holweg, 2005, p. 610). An extended lean approach, rooted on value creation, is much more similar to the agile approach.

Figure 2 - Leagile approach



Source: Adapted from Mason-Jones *et al.* (2000)

2.3 A three-ladders model of agility

The agile approach has been proposed, since the beginning of the 1990s, as a radical management innovation: "*Agility challenges the prevailing paradigms of organization, management, production, and competitiveness*" (Goldman *et al.*, 1995, p. 5). The wideness of its principles and the richness of the academic references are in striking contrast to the limited development and diffusion of specific agility practices (Sherehiy *et al.*, 2007; Vázquez-Bustelo *et al.*, 2007; Zhang and Sharifi, 2007).

The identification of a specific implementation path and of specific agility tools has been recognised as an important issue for a long time. Sharifi and Zhang (1999) have underlined that "*until now, proposals for ways to become agile and characteristics defined for an agile manufacturer have been more or less expressed in a Utopian way*" (p. 10) and in a following article Zhang and Sharifi (2000) specified that "*the question is how a manufacturing enterprise could identify the necessary tools and techniques and*

acquire the relevant capabilities and abilities in order to become agile. Until now, answers to this question have been expressed in a very ambiguous way" (p. 497).

Even now such an issue remains open. As Zhang (2011) highlights: "*The last 15 years have witnessed the wide spread acceptance of agility as a new competitive concept. Despite this, the question of how to build agility in an organisation remains to be answered satisfactorily*" (p. 303). The need to fill this gap is recognised as very relevant and urgent as "*unfortunately, agile manufacturing has been freely promoted without the necessary development of models to achieve it, generating serious risks for firms that are trying to improve their performance*" (Vázquez-Bustelo *et al.*, 2007, p. 1304).

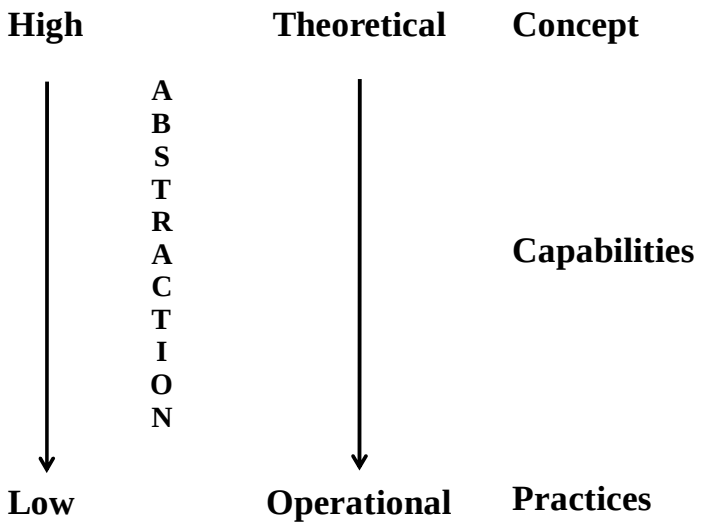
The difficulty of identifying precise agile capabilities and practices is surely partially due to the origins of the agile approach. The agile approach was not driven by a leading company, whose innovative practices were coded and diffused, as in the case of the lean practices derived from the Toyota Production System (Ohno, 1988). The agile approach was proposed based on the overall experience of many innovative American companies as "*a deliberate, comprehensive response to constantly changing requirements for competitive success in current and emerging markets. As a comprehensive system, agility defines a new paradigm for doing business. It reflects a new mind-set*" (Goldman *et al.*, 1995 p. 41). At the same time, they state clearly that "*no one feature of agility [related to technology or organizational structure or personnel utilization], taken by itself is an innovation unique to it*" (Goldman *et al.*, 1995 p. 41) and no single company can represent a model for agility.

Moreover, the difficulty of indicating precise practices is worsened by the context to which agility is applicable. As agility refers to responding and exploiting uncertainty and change, the context where this approach is more relevant, is not naturally conducive to a set of formalised practices: "*the nature of the agile supply chain does not allow for prescriptive and deterministic implementation paths, as so often said in management literature*" (van Hoek *et al.*, 2001, p. 145).

The gap between definition of the agility concept and identification of the required implementation tools can be overcome by making reference to the three ladders of abstraction (Bernardes and Hanna, 2009). In particular, the analysis will start from the

more theoretical level of the "concept" down to the more operational levels of the "capabilities" and the "practices" (Figure 3).

Figure 3 - Three ladders of abstraction model



Source: Adapted from Bernardes and Hanna (2009)

In the management literature, a three-ladders of abstraction model has been used to describe a given approach, in terms of very general principles, and then specify it in terms of major programmes developed according to those general principle and then in terms of specific actions put in place to achieve the expected change[4] . For instance Becker and Gerhart (1997) and Colbert (2004) used it with respect to the Human Resources systems (principles; policies; and practices) as well as Werr, Torbjörn and Docherty (1997) with respect to the Business Process Reengineering (approach; methods; tools) (Werr *et al.*, 1997).

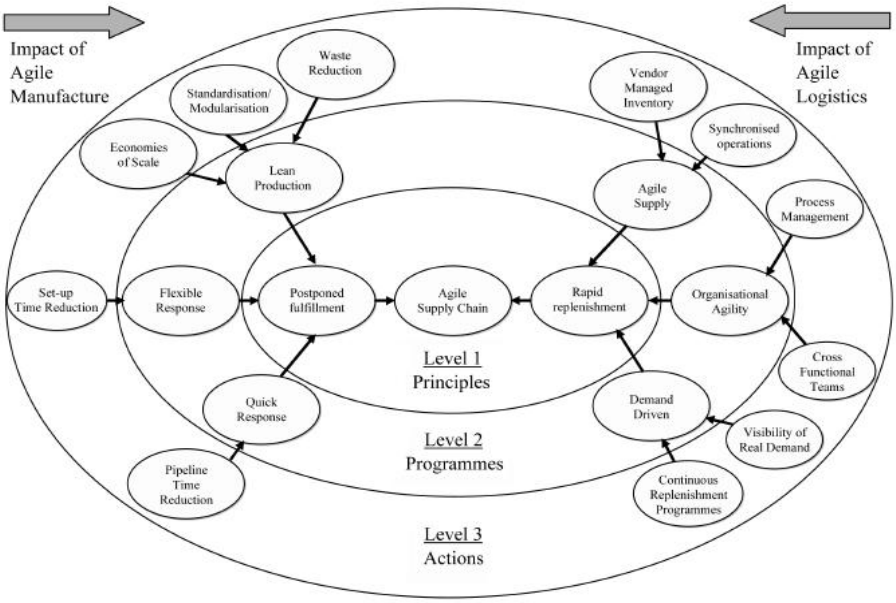
To analyse the agile approach, Christopher and Towill (2001) proposed a framework based on the three levels of "principles – programmes – actions" (Figure 4).

"*Level 1 represents the key principles that underpin the agile supply chain, i.e. rapid replenishment and postponed fulfilment. Level 2 identifies the individual programmes such as lean production, organisational agility and quick response which must be*

[4] Such a framework could be further extended by adding also a reference to the metrics, in terms of key performance indicators as suggested by Wright (1998) in order to obtain an immediate reference to the impact of given practices.

implemented in order for the Level 1 principles to be achieved. Finally Level 3 specifies individual actions to be taken to support Level 2 programmes, for example, time compression information enrichment and waste elimination" (Christopher and Towill, 2001, p. 243).

Figure 4 - Three level model for enabling the agile supply chain



Source: Christopher and Towill (2001)

Differently from the above mentioned framework, this research focuses on capabilities as Level 2 and on practice as Level 3, following the proposal by Swafford, Ghosh and Murthy (2006) aimed at linking the agile approach with the resource-based view (RBV) of the firm. In particular, the capabilities are defined as "*firm-specific sets of skills, processes, and routines, developed within the operations management system, that are regularly used in solving its problems through the means of configuring its operational resources … [they] emerge gradually over time, tacit, path dependent, and can be validated through the application to problems faced by a firm*" (Wu *et al.*, 2012, pp. 124-125). Practices are defined as "*specific procedures, organizational arrangements, protocols, tools, techniques, and other ways of doing things … situation generic, highly structured sets of activities that can be transferred across organizations and industries to help operations management personnel address similar operational problems*" (Wu *et al.*, 2012, p. 123).

This approach is in line with the definition by Amit and Schoemaker (1993), highlighting that capabilities are "*a firm's capacity to deploy Resources, usually in combination, using organizational processes, to effect a desired end. They are information-based, tangible or intangible processes that are firm-specific and are developed over time through complex interactions among the firm's Resources*" (p. 35). Given that a capability is "*a high-level routine (or a collection of routines)*" (Winter, 2003, p. 991) where the routine is a "*behavior that is learned, highly patterned, repetitious, or quasi-repetitious, founded in part in tacit knowledge*" (Winter, 2003, p. 991), at Level 3 of the conceptual ladder, capabilities are detailed in terms of routines, here called practices.

2.4 A framework for analysing agile capabilities and practices

The literature on agility proposes three major frameworks for analysing the relevant capabilities and practices, namely a model based on agility drivers, capabilities, and providers (Zhang and Sharifi, 2000; 2007); a model based on flexibility, value chain agility and performance (Swafford *et al.*, 2006); and a model based on agility drivers, agility enablers and outcomes (Vázquez-Bustelo *et al.*, 2007). Each of these models is described in more detail below.

Zhang and Sharifi (2000) propose a framework centred on agility drivers, agility capabilities and agility providers. The idea is that "*[d]ifferent organisations experience different sets of changes and different levels of pressures resulting from the changes, and therefore would require different combinations of practices and tools to cope with the changes*" (Zhang and Sharifi, 2000, p. 497). In their framework, "agility drivers" are those pressures from the business environment that force a company to change to remain competitive, such as technological change, increased customer expectations or shortened product life cycle. "Agility capabilities" are those capabilities required to respond, reactively or proactively, to the changes in the environment, namely: responsiveness, competency, flexibility and quickness. "Agility providers" are all those practices, methods and tools by which agility capabilities can be achieved. Agility providers are based in four major areas: organisation, people, technology and innovation.

Swafford, Ghosh and Murthy (2006) propose a model based on flexibility, agile capabilities and performance. In their framework the "determinants" of value chain agility are related to flexibility in product development, procurement, manufacturing, and logistics, plus the integrative role of IT. Their model is based on the resource-based view (RBV) of the firm and, according to this approach, value chain agility is analysed as to its impact on the firm performance both in terms of value chain performance (such as on-time delivery, delivery lead-time or time to market) and in terms of competitive business performance (such as return-on-assets, global market share or profit margins).

Vázquez-Bustelo, Avella and Fernandez (2007) propose a model based on agility drivers, agility enablers and outcomes. "Agility drivers" are the characteristics of turbulent business environment: mainly high dynamism, high hostility/competition, high complexity and high diversity. "Agility enablers" are the practices supporting agile manufacturing. The direct outcome of the adoption of agile practices is on manufacturing strength, measured mainly as to cost, flexibility, quality, delivery service and environmental impact. Manufacturing strength impacts on firm competitiveness and business performance. Their model starts from the analysis of the business environment and analyses practices and outcomes. However, the list of agile practices they are testing is so comprehensive that there is risk to include, as part of an agile strategy, any "new" management practice.

The characteristics of the three models are shown in Table 3.

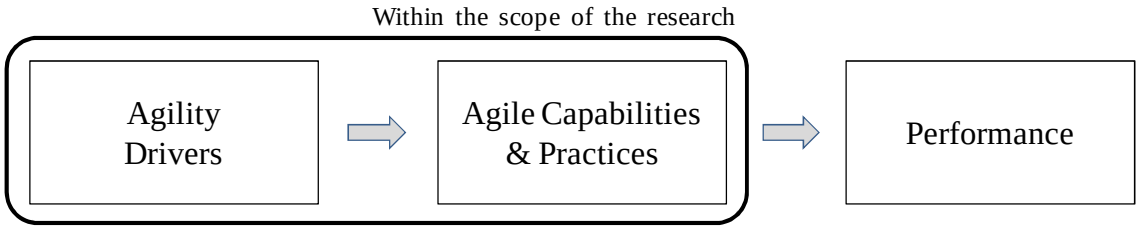
.

Table 3 - A comparison of three frameworks on agility

Authors	Agility drivers	Agile capabilities	Agile practices (grouped by)	Performance indicators
Zhang and Sharifi, 2007	Changes in: • Marketplace • Competition • Customer requirements • Technology • Social factors • Suppliers • Internal complexity	• Proactiveness • Responsiveness • Competency • Flexibility • Quickness • Focusing on the customer • Partnership	• Relationships with suppliers and competitors • Technology • People • Integration • Innovation • Relationships with customers • Information systems	No specific reference
Swafford *et al.*, 2006	No specific reference	Flexibility (and IT support) in each value chain function: • Product development • Procurement/sourcing • Manufacturing • Distribution/logistics Plus • IT integration	No specific reference	• Value chain performance (i.e. on-time delivery, backorder level, % of stock-outs, ...) • Competitive business performance (i.e. ROA, market share, profit margins, ...)
Vázquez-Bustelo *et al.*, 2007	• High dynamism • High hostility/competition • High complexity • High diversity	No specific reference	• Agile human resources • Agile technologies • Value chain integration • Concurrent engineering • Knowledge management	Manufacturing strength (cost, flexibility, quality, delivery, service and environment) and then competitiveness or business performance (ROA, sales volume, customer loyalty, responsiveness to changes, labour productivity)

In line with these frameworks, this research will relate agile capabilities and practices to the environmental conditions that are driving them (Eisenhardt and Martin, 2000; Sirmon *et al.*, 2007). However, being a qualitative exploratory study, this research will not analyse their impact on performance (Figure 5).

Figure 5 - Framework for the design and implementation of an agile strategy



In the following section different types of agility drivers and agile capabilities are reported as discussed in the literature, giving specific attention to the fashion industry.

2.4.1 Different types of agility drivers

The literature on agility highlights that turbulence in the business environment represents an important agility driver, shaping the required capabilities and practices (Yusuf *et al.*, 1999; Zhang and Sharifi, 2000; Baramichai *et al.*, 2007; Zhang, 2011).

The literature recognises that different changes and uncertainty scenarios have a major impact on the kind of capabilities required for firm competitiveness (Tushman and Anderson, 1986; Pil and Cohen, 2006; Koka and Prescott, 2008). For instance, the capabilities required to compete in "high-velocity markets" are very different compared to those developed in moderately dynamic markets (Eisenhardt and Martin, 2000) and "the very structures, processes, routines and relationships that support continuous or incremental innovation often act to inhibit rather than enable discontinuous innovation" (Phillips *et al*., 2006, p. 452). Such differences impact on the characteristics of agility.

High-turbulence environments, characterised by unpredictable changes in market or customer demand, challenge the existing procedures and make them no longer adequate (Gunasekaran, 1998; Bernardes and Hanna, 2009). Under such a scenario, agility is considered to be "*primarily concerned with the ability of enterprises to cope with unexpected changes, to survive unprecedented threats from the business environment*" (Zhang and Sharifi, 2000, p. 496). Therefore agility "*is not the ability to absorb change within pre-established parameters, but the ability to reorganize rapidly and smoothly, whereby the end state or situation needing change are not established a priori. It is not bound by pre-defined possibilities, as it implies the fundamental change in the arrangement itself*" (Bernardes and Hanna, 2009, p. 42). The agility drivers characterising these market scenarios have a strong impact initially on the development and launch of new (eventually customised) product and then on the planning and distribution processes.

Low-turbulence markets, where uncertainty is mainly related to demand variability, require a refinement of existing procedures without radical changes (Christopher, 2000; Stratton and Warburton, 2003; Zhang and Sharifi, 2007; Baker, 2008). Under this scenario, agility appears as "*the ability of an organization to respond rapidly to changes in demand, both in terms of volume and variety*" (Christopher, 2000, p. 38). The challenges that the agile supply chain need to face are mainly focused on the planning, manufacturing and logistics implications of an uncertain and fragmented demand, in contrast to the stable and high volume demand characterising the market scenario where lean is applied (Stratton and Warburton, 2003).

The use of the same term “agility” with respect to such different uncertainty scenarios might generate confusion. Therefore some authors (e.g., Gunasekaran, 1998; Bernardes and Hanna, 2009) refer to agility only with respect to high-turbulence scenarios, while using responsiveness to deal with low-turbulence. However, this research, in line with the mainstream literature, will use the term agility with respect to approaches aimed at facing both these turbulence scenarios.

In the fashion industry, both these turbulence scenarios are very recurrent and relevant; the high-turbulence scenario refers to the seasonal renewal of the collection portfolio, while the low-turbulence refers to the changes in the collection production and delivery plans.

Traditionally, fashion companies present their collections twice a year at the major fashion fairs, radically revising them to set up (or to follow) new fashion trends as well as to maintain the differentiation with respect to the garment manufacturers. The launch of these new seasonal collections can be divided in two major stages, each of them presenting specific agility challenges. These two stages are:

- before the fashion fairs: fashion companies develop their prototypes and samples with the goal of offering a wide variety of new models so as to increase the chances of obtaining a strong selling item, without making any major commitment regarding the production stage;
- after the fashion fairs (and the related sales campaign): fashion companies, based on the firm orders collected from their customers, issue most of their procurement orders and start most of their production activities.

Before the fashion fairs, the major agility challenges relate to the development of a fashion collection that is in line with the emerging fashion trends. This can be considered as a high-turbulence scenario requiring agility for the development of a wide variety of prototypes and samples which can be updated until the very last minute before the fashion fair. Moreover agility is required in the preparation of the scaling up that, in a very short time, will be required for the production of the successful prototypes and samples.

After the fashion fairs (and their related sales campaign), the major agility challenges relate to the planning for the production and delivery of the acquired orders. This can be considered as a low-turbulence scenario, where agility is required to cope with the frequent changes in the assembly scheduling due to a lack/delay of components, without missing the delivery dates agreed with the retailers.

In the past decade, two new approaches – lean retailing (Abernathy *et al*., 2000) and fast fashion (Barnes and Lea-Greenwood, 2006) – have appeared as new agility drivers for the fashion companies. The move to lean retailing is reducing both the percentage of the confirmed orders and the time companies have got in order to manufacture the actual orders, both of which have a major impact on the risk level of the supply chain operations. This calls for a revision of the planning and sourcing procedures. Furthermore, the trend towards fast fashion, with an increased number of collections presented yearly, and consequently a shorter development time, is putting stress on the development process as well as the production and delivery phase.

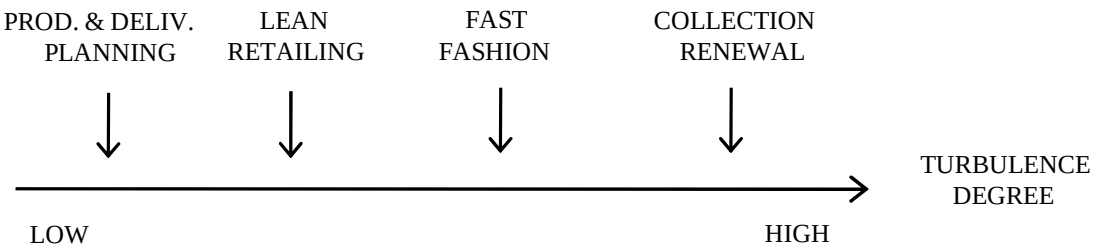
Lean retailing (Abernathy *et al*., 2000; Fisher *et al*., 2000; Birtwistle *et al*., 2006; Drake and Marley, 2010) can be considered an agility driver related to low-turbulence, given that it impacts mainly on the planning and production phase. Under such a scenario, fashion companies – and their suppliers – need to be able to schedule, and reschedule, their production in a very short time. They have to be able to react in real time, without being able to rely much on stock, given that stock can fast become obsolete.

Fast fashion (Barnes and Lea-Greenwood, 2006; Byun and Sternquist, 2008; Tokatli, 2008; Bhardwaj and Fairhurst, 2010) can be considered as an agility driver related to a medium-high level of turbulence, given that it impacts both on new product development and on production/delivery. Fast fashion collections are developed and have to be delivered with a very short time horizon. However, the changes from one collection to another are quite limited; moreover, the width and depth of each fast fashion collection are also quite limited. At the same time the production and delivery are defined by the company – normally based on a direct link with the retailers – and are planned in a conservative way so as not to leave stock.

The four agility drivers mentioned above can be framed with respect to a continuum of turbulence scenarios that range from low-turbulence in the case of collection production

planning and of lean retailing (where the agility challenges refer mainly to the production/delivery phase) up to high-turbulence[5] in the case of collection renewal (where the agility challenges refer mainly to product development). Fast fashion is in an intermediate situation with agility challenges involving both product development and production planning (Figure 6).

Figure 6 - Turbulence degree characterising different agility drivers



2.4.2 Different types of agile capabilities

Agile capabilities and practices – as capabilities and practices in general – are both operational and dynamic as well as being partially internal and partially shared across the supply network.

The literature on RBV and dynamic capabilities distinguishes between operational (also called ordinary) capabilities and dynamic capabilities, the former being the "*how we earn the living now*" capabilities and the latter capabilities that "*change the product, the production process, the scale, or the customers (markets)*" (Winter, 2003, p. 992). Given the definition of agility as the capability to effectively manage, in a turbulent environment characterised by uncertainty and change, a wide product range frequently renewed, it can be assumed that a large part of the agile capabilities (and their related practices) will be dynamic. However, it has to be considered that a company might face uncertainty and change also through operational capabilities by adding an *ad hoc* problem solving, in a " *'firefighting' mode, a high-pace, contingent, opportunistic and perhaps creative search for satisfactory alternative behaviours*" (Winter, 2003, p. 992).

[5] In evaluating the characteristics of the high-turbulence scenario, it has to be taken into account that the uncertainties in the development of a seasonal collections are related to the difficulty of foreseeing the fashion trends but involve only to a limited extent the technology challenges that are characterising high-tech businesses (Bahrami and Evans, 2011).

The literature on RBV and relational capabilities highlights that the valuable capabilities – as well as the valuable resources – often are not completely owned by a single firm but are shared across the supply chain (Dyer and Singh, 1998; Fawcett *et al.*, 2011). "*A firm's critical resources may span firm boundaries and may be embedded in interfirm routines and processes*" (Dyer and Singh, 1998, p. 661) and "*the focus on resources that are owned or controlled by the firm undermines the essential contribution of resources of the alliance partners*" (Lavie, 2006, p. 638). Such a general statement is particularly applicable to agile capabilities, given that the supply network plays an important role in achieving agility as it allows firms to access new resources so as to improve their performance in terms of responsiveness and time-to-market (Christopher, 2000; Narasimhan and Das, 2000; Brown and Bessant, 2003; Swafford *et al.*, 2006; Zhang and Sharifi, 2007; Khan and Pillania, 2008). Therefore an analysis of agile capabilities has to look at capabilities and practices beyond the internal boundaries of the firm.

Considering that the fashion industry is strongly based on the renewal of seasonal collections (Sproles, 1981; Tran, 2010) and that the supply network plays a major role in allowing companies to achieve agility (Christopher *et al.*, 2004; Tran, 2010), this research focuses on what appears as a dynamic and relational agile capability: the management of supply partnerships.

In order to lay the path for the field research, the next chapter presents a systematic literature review of the empirical evidence on the characteristics of supply partnerships in an agile strategy.

3 AGILE SUPPLY PARTNERSHIPS: A SYSTEMATIC LITERATURE REVIEW

3.1 Introduction

The systematic literature review (SLR) reported in this chapter is focused on a specific agile capability: the management of supply partnerships. Given the need to focus a precise topic for the SLR, supply partnerships have been selected because their role in an agile strategy appears to be at the same time both relevant and controversial.

In an agile strategy, suppliers play an important role as they allow firms to access new resources so as to improve their performance in terms of responsiveness and time-to-market (Christopher, 2000; Narasimhan and Das, 2000; Brown and Bessant, 2003; Swafford *et al.*, 2006; Zhang and Sharifi, 2007; Khan and Pillania, 2008). However, despite the general consensus on the relevance of partnerships to supply chain agility, the literature reveals disagreements and contradictions regarding the specific characteristics supply relationships should have to foster an agile strategy. Some authors propose long-term partnerships (Yusuf *et al.*, 2004; Storey *et al.*, 2005; Zhang and Sharifi, 2007; Braunschiedel and Suresh, 2009), while other authors recommend short-term collaborations as current suppliers might not have the required skills or the requested availability in the future (Goldman *et al.*, 1995; Gunasekaran, 1998; van Hoek *et al.*, 2001; Christopher *et al.*, 2004).

Using these premises, this chapter presents an SLR of the empirical evidence regarding supply relation characteristics in an agile supply chain strategy, with the aim of improving the theoretical understanding of supply partnerships in an agile strategy as well as providing useful suggestions to firms which are addressing this issue.

The rest of the chapter is structured as follows: the second section presents the debate on the characteristics of supply partnerships in agile supply chains; the third section describes the methodology followed for the SLR; the fourth section analyses the evidence from the SLR; the fifth section comments on the paradox of agile supply partnerships; and the implications for the field research are presented in the final section.

3.2 Supply partnerships in agile supply chains

Agility has been suggested as the means through which the supply chain is able to adapt to the changing needs of the market and to customer demand (Christopher, 2000; Gligor and Holcomb, 2012). A high level of collaboration and integration with the suppliers is considered to be an important enabler of agile supply chain (Burgess, 1994; Christopher and Towill, 2001; Lin *et al*., 2006). Because of the relevance of supply relationships with a high level of shared information and interdependence between partners, this study focuses only on those articles considering supply partnerships (alternatively defined as high-involvement relationships). A supply partnership can be described as a relationship between a firm and its supplier "*based on mutual dependency and trust, where both parties are committed to collaboration beyond a sequence of buying–selling transactions*" (Ploetner and Ehret, 2006, p. 4).

Despite the relevance of supply partnerships (Christopher, 2000; Narasimhan and Das, 2000; Brown and Bessant, 2003; Swafford *et al.*, 2006; Zhang and Sharifi, 2007; Khan and Pillania, 2008), the literature reveals disagreements and contradictions regarding the characteristics that supply partnerships should have in order to effectively support an agile strategy. Some authors propose long-term partnerships with a reduced number of trustworthy suppliers as enablers of supply chain agility. According to this view, the commitment of the suppliers is considered important for facing the challenges and time pressures characterising the agile strategy (Yusuf *et al*., 2004; Storey *et al.*, 2005; Zhang and Sharifi, 2007; Braunschiedel and Suresh, 2009). The opposite argument stresses that, given the scenario of change and uncertainty characterising an agile strategy, the present suppliers might not have the required skills or the requested availability in the future and therefore short-term collaborations are preferable (Goldman *et al.*, 1995; Gunasekaran, 1998; van Hoek *et al.*, 2001; Christopher *et al.*, 2004). In addition to these perspectives, other authors highlight that both types of supply relationship can fit with an agile strategy, depending on different market/product characteristics (Yusuf *et al.*, 1999; Baramichai *et al.*, 2007; Zhang, 2011), without analysing in detail the characteristics of these different relationships and their impact on agility performance.

Long-term partnerships (often called strategic partnerships) allow an improvement in response time by making available information on aspects such as orders, inventory

level and production plans (Squire *et al.*, 2009) and an increase in production efficiency by leveraging on supplier operational innovativeness/continuous process improvement (Dyer and Hatch, 2006; Azadegan, 2011). Moreover these partnerships allow an improvement in product development processes, by providing and receiving access to new ideas and new capabilities (Bensaou and Anderson, 1999; Kotabe *et al*., 2003). All these contributions can be very important for facing dynamic and unpredictable markets (Hoyt and Huq, 2000).

In spite of the relevance of their potential contributions, these long-term partnerships can bear significant risks from the perspective of an agile strategy aimed at coping with uncertainty and change. They might transform from a strategic asset into a liability if they result in preventing the company from adopting the required changes or from accessing the skills or resources required (Rich and Hines, 1997; Jordan and Michel, 2000). As highlighted by Uzzi (1997) "*a deep and sudden structural change in the resource flows can cause embeddedness to shift from an asset to a liability*" (p. 57). Long-term collaboration can create complacency (Anderson and Jap, 2005) and can have "lock-in" and "lock-out" effects (Gulati *et al*., 2000; Capaldo, 2007), preventing the buyer from developing new partnerships, with a consequent negative impact on overall performance. The challenges of such supply partnerships are well represented by Gadde and Snehota (2000): "*Well-developed, high-involvement supplier relationships are at the heart of a company's survival and the basis of its growth and development. But high-involvement relationships also tie the company into its current ways of operating and restrict its capacity to change. Supplier relationships are, for a company, both the impulse for development and the cage that imprisons it*" (p. 315).

The contrasting positions on whether long-term partnerships support or harm an agile supply chain can be related to differences in the agility drivers due to differences in the market/product characteristics (Yusuf *et al.*, 1999; Baramichai *et al.*, 2007; Zhang, 2011) or, more generally, to differences in the business environment turbulence (Zhang and Sharifi, 2000). The agile strategy linked to a highly turbulent environment is likely to be very different from the one implemented in low-turbulence markets (Gunasekaran, 1998; Christopher, 2000; Stratton and Warburton, 2003; Zhang and Sharifi, 2007; Bernardes and Hanna, 2009).

Therefore it is expected that supply relationships in an agile strategy will be different according to the kind of change and uncertainty that agility is designed to face.

Given the different theoretical positions related to the kind of supply partnerships that better fit an agile supply chain, this work will carry out an SLR of the empirical evidence regarding supply relations in an agile supply chain with the goal of highlighting the characteristics of these partnerships as well as the influence of the different agility drivers, as represented by different degrees of business environment turbulence.

3.3 Systematic literature review: the methodology

This research followed the systematic review method, as described by Tranfield, Denyer and Smart (2003): planning, conducting and reporting/disseminating the review. The SLR has been developed around the following question:

> considering different degrees of business environment turbulence, what are the characteristics supply partnerships should have in order to effectively foster an agile strategy?

As an initial planning step, a review protocol was prepared, documenting the aim of the review, the search strategy (i.e. proposed search strings and databases to be used), selection criteria, and approaches for data extraction and synthesis. Then the search for relevant research was carried out focusing on two databases: Business Source Premier (EBSCO) and ABI/INFORMS (ProQuest). These databases were selected because they include the vast majority of journals in the fields of Operations and Supply Chain Management relevant to this research. The search was conducted in July 2012.

Given the focus on agile supply relationship, the initial string was as follows:

> **agil***
>
> **AND suppl***
>
> **AND relation* or partner***
>
> **AND (data OR empirical OR test OR statistical OR finding* OR result* OR evidence OR case OR stud*)**

The keyword agil* was selected to cover both agile and agility, the keyword suppl* to include supply, supply chain and supplier, while the keywords relation* or partner* were used to target both relationships and relations, and partnerships and partnering. Following the approach proposed by Newbert (2007) and extending it in order to cover case studies as well, the final keyword was used to select articles with an empirical content. A filter for "Scholarly (Peer Reviewed) Journals" was also used, since the main focus of this review was to find evidence that has been collected and validated in a rigorous manner. No restriction by time period was used in the search process.

The search keywords applied to the articles' abstracts identified 60 articles on EBSCO and 59 on ABI/ProQuest; 45 papers were found on both databases so that the total number of non-duplicated articles identified was 74.

Given the limited number of hits and that a search focused exclusively on relationships might have missed articles that were describing agile supply relationships as part of a broader view on agile capabilities and practices, a second string was applied in both databases (to the abstracts) as below:

agil*

AND (capabilit* OR practic*)

AND (data OR empirical OR test OR statistical OR finding* OR result* OR evidence OR case OR stud*)

NOT "agile software development"

The keywords capabilit* or practic* were selected to identify articles dealing with capabilities and practices. Following an initial test on a search for agile capabilities and practices, it was decided to include an additional Boolean operator to exclude articles related to agile software development, which is outside the scope of this work.

The search string identified 310 articles on EBSCO and 307 on ABI/ProQuest. 181 papers were found on both databases, so the total number of non-duplicated articles identified in this search was 436.

By excluding the duplication between the two searches, the total number of non-duplicated articles identified was 471 (Table 4).

Table 4 - Results of search strings by database

	EBSCO	**ABI/ProQuest**	**Total** (excluding duplicates)
Results of the first search (focused search on agile supply relationships)	60	59	74
Results of the second search (broad search on agile capabilities and practices)	310	307	436
Total (excluding duplicates)	338	339	471

Abstracts for all 471 articles were evaluated to assess if they were appropriate for a full review. The inclusion/rejection criteria presented in Table 5 were used to make the final selection. The selection was made based on abstracts whenever possible, but also by going to the full text whenever the abstract did not include the information required for the evaluation.

Table 5 - Criteria for the initial selection of papers

Inclusion/Rejection Criteria	Rationale
Management content	Only the articles that were considering agility as a management approach were selected while those articles that were looking at agility from a "technical" point of view (mainly as a software development technique or a characteristic of hardware) were excluded.
Research Methodology	Since the focus of the review was on empirical evidence of agility, it was decided to reject all conceptual and theoretical articles and articles using non-empirical methods such as simulation. To ensure richness of previous findings, all articles presenting any empirical evidence of agility were included.
Reference to supply relationship	Since the focus of the review was on supply relationships in an agile supply chain it was decided to reject all articles that did not make reference to supply relationships.
Industry/sector	Only the manufacturing industries were included, leaving aside the service sector, since the focus of the study was targeted on the supply chain relationships related to the physical flow of goods, so as to exclude the specificities of service supply chains.
Geographical regions	No rejections were made on the basis of geographical regions of the research.
Publication dates	No rejections were made on the basis of date of publication.
Quality filter	No rejections were made on the basis of the quality of the articles, given that all the articles originally selected were peer-reviewed, with the only exception being those articles that did not have an author.

Following this initial screening, 70 articles, all making reference to supply relationships in agile supply chains, were selected for a detailed analysis of the full text (Table 6).

Table 6 - Results of the first article selection (following abstract read)

	EBSCO	ABI/ProQuest	Total (excluding duplicates)
Selected articles from first search (focused search on agile supply relationships)	22	22	25
Selected articles from second search (broad search on agile capabilities and practices)	51	49	61
Total (excluding duplicates)	59	58	70

To analyse the characteristics of supply relationships, a coding was developed to look both at the degree of partners' involvement (High-Involvement vs. Low-Involvement) and at the partnership duration (Long-term vs. Short-term) (Gadde and Snehota, 2000). Although several studies do not distinguish between degree involvement and duration – thus considering only two possibilities ("High-Involvement and Long-Term" vs. "Low-Involvement and Short-Term" relationships), these two variables were considered separately, given that they refer to different dimensions of the supply relationship (i.e. the relational and temporal dimensions). While such a distinction applies to every supply relationship, in the case of an agile supply chain, it seems even more appropriate, given the relevance an agile strategy confers to the timing issues.

Considering the degree of involvement as a continuum between "Low-Involvement" and "High-Involvement" (Granovetter, 1973; Dyer, 1997; McEvily and Zaheer, 1999; Capaldo, 2007), high-involvement supply relationships were conceptualised by considering three independent factors (Dyer, 1997; Dyer and Singh, 1998): (1) inter-firm knowledge sharing routines; (2) investment in relation-specific assets; (3) self-enforcement governance mechanisms (i.e., trust-based mechanisms). The presence of at least one of these factors in a supply chain relationship discloses a high-involvement relationship.

An inter-firm knowledge sharing routine can be defined as "*institutionalized inter-firm processes that are purposefully designed to facilitate knowledge exchanges between partners*" (Dyer and Singh, 1998, p. 665). As the development of knowledge sharing routines requires the partners to be willing to commit and invest in knowledge-intensive relationships, they can be considered as good indicators of the (high) degree of partners' involvement in the economic exchange (Dyer and Singh, 1998).

Investments in relation-specific assets are "*durable investments [in site, physical and human assets] that are undertaken in support of particular transactions*" (Williamson, 1985, p. 55). These investments indicate the partners' commitment to the relationship, thus increasing the cooperative behaviour and transaction value of the partnership (Dyer, 1997; Saxton, 1997; Dyer and Singh, 1998). Hence, the presence of relation-specific assets in a supply chain relationship can be considered as evidence of high-involvement situations.

The governance structure represents a central component for protection against opportunism in inter-firm relations (Dyer, 1997). According to transaction cost theory, various contractual modes are basically available for avoiding opportunism, such as formal mechanisms (i.e., legal contracts) or self-enforcement relational mechanisms which are directed at the maintenance of relations (Williamson, 1991). Among the self-enforcement governance mechanisms, inter-organisational trust has been shown to be especially forceful for minimising transaction costs and ensuring the continuity and stability of the relationship (Zaheer and Venkatraman, 1995; Panayides and Lun, 2009). As the development of trust-based mechanisms in a relationship requires commitment and a reciprocal cooperative attitude of partners (contrary to what happens in formal/contractual governance mechanisms), self-enforcement governance mechanisms can be identified as evidence of the partners' high involvement in a supply relationship.

The partnership duration is very much dependent on industry clockspeed (Fine, 1998; Guimaraes *et al.*, 2002). Given that – as for any literature review – the coding needed to be built upon research works developed according to different models and without knowing in detail the references taken by the different authors, the reported codes were directly those classified in the articles.

The different change and uncertainty scenarios that agility is designed to face, have an impact on the type of supply relationship a company is likely to build (Pilbeam *et al.*, 2012). Therefore two main scenarios were considered: high-turbulence as reflected by radical market changes (Gunasekaran, 1998; Zhang and Sharifi, 2000; Bernardes and Hanna, 2009), and low-turbulence as reflected by demand uncertainty with respect to order quantity and order variety (Christopher, 2000; Stratton and Warburton, 2003; Baker, 2008). This is also in line with the evidence from Zhang and Sharifi (2007) who, while proposing a taxonomy of three types of agility (ability to satisfy and be close to customers; capability to thrive in changes that may be anticipated; and ability to cope with unanticipated changes), find just two basic approaches agile firms have towards supply partnerships. They find that agile companies based on responsiveness and quickness (mainly concerned with demand uncertainty) have a limited interest towards partnerships, while agile companies based on proactiveness (mainly concerned with more radical market changes) consider partnerships to be very important (Zhang and

Sharifi, 2007). Following Zhang and Sharifi (2000) the degree of turbulence in the business environment was evaluated as related to: marketplace; competition; customer requirements; technology; and social factors.

The 70 articles selected for the full text review were subject to a further screening based on whether these articles were analysing high-involvement relationships and whether they were qualifying the duration of the relationship. Table 7 provides the theoretical rationale for the selected variables and details of the coding procedure.

Table 7 - Coding variables used in the detailed analysis of the papers

Coding variables	**Rationale**
Reference to high-involvement partnerships	Since the controversial theoretical positions relate to "high-involvement" partnership, it was decided to further analyse only articles that were related to such a type of relationship. A high-involvement supply relationship was conceptualised considering three independent factors: (1) inter-firm knowledge sharing routines; (2) investment in relation-specific assets; (3) self-enforcement governance mechanisms (i.e., trust-based mechanisms). The presence of at least one of these factors was assumed to disclose a high-involvement relationship. The codes used were: Yes; No.
Partnership duration	Since the duration is recognised as an important characteristic of a supply relationship, it was decided to have a detailed coding for it. While the evaluation of the relationship duration is very much dependent on industry clockspeed (Fine, 1998; Guimaraes *et al*., 2002), the coding considered here was the one reported in the articles. The codes used were: Long-Term; Short-Term; Both; Unclear/Unspecified.
Turbulence of the business environment	Since supply relationships can have different characteristics, depending on the change and uncertainty scenario the agility is designed to face, it was decided to have a coding on the degree of turbulence of the business environment. High-turbulence reflects radical market changes or dynamic markets (as it might happen in high-tech industries – as a result of technological change – or in garment/footwear industries – as a result of fashion trends). Low-turbulence reflects demand uncertainty with respect to order quantity and order variety. The codes used were: High-turbulence; Low-turbulence; Unclear/Unspecified.

This second selection process identified 25 papers that were at the same time describing high-involvement relationships and making a precise reference to the relationship duration. No exclusion was made based on the turbulence of the business environment. Table 8 presents a synoptic view of the selected papers.

Table 8 - Synoptic view of the selected articles

	Author(s)	Year	Journal	Research method	Sample	Industry	Country
1	Chiang, Kocabasoglu-Hillmer and Suresh	2012	International Journal of Operations & Production Management	Survey (multi-industry)	144 respondents	Multi-industry (SIC 34-38)	USA
2	Ogulin, Selen and Ashayeri	2012	Journal of Enterprise Information Management	Survey (multi-industry)	231 respondents	Multi-industry	Cross-country
3	Whitten, Green Jr. and Zelbst	2012	International Journal of Operations & Production Management	Survey (multi-industry)	132 respondents	Multi-industry	USA
4	Chen and Chiang	2011	Industrial Marketing Management	Single case study	-	Electronics/optic storage	Taiwan
5	Zhang	2011	International Journal of Production Economics	Multiple case study	3 companies	High-tech optical/microwave devices, special purpose instruments	UK
6	Tran	2010	Industry & Innovation	Multiple case study	5 companies	Fashion	Denmark
7	Braunscheidel and Suresh	2009	Journal of Operations Management	Survey (multi-industry)	218 respondents	Multi-industry	USA
8	Katzy and Crowston	2008	Technovation	Multiple case (longitudinal)	100 respondents	Multi-industry	Switzerland
9	Khan and Pillania	2008	Management Decision	Survey (multi-industry)	128 respondents	Automotive, textile, food	India
10	Baramichai, Zimmers and Marangos	2007	Supply Chain Management	Single case study	-	Plastics manufacturing	USA
11	Hoyt, Huq and Kreiser	2007	Management Decision	Survey (multi-industry)	66 respondents	Automotive, instrumentation equipment and semiconductors	USA
12	Masson, Iosif, MacKerron and Fernie	2007	International Journal of Logistics Management	Multiple case study	14 companies	Fashion retailing	UK - Romania - China/Hong Kong

	Author(s)	Year	Journal	Research method	Sample	Industry	Country
13	Paulraj and Chen	2007	Journal of Supply Chain Management: A Global Review of Purchasing & Supply	Survey (multi-industry)	221 respondents	Multi-industry	USA
14	Vázquez-Bustelo, Avella and Fernandez	2007	International Journal of Operations & Production Management	Survey (multi-industry)	283 respondents	Chemicals, metal products, electronics	Spain
15	Oberoi, Khamba, Sushil and Kiran	2007	Human Systems Management	Survey (multi-industry)	68 respondents	Automotive, mechanical sub-assembly; electronics and electrical machinery	India
16	Doyle, Moore and Morgan	2006	Journal of Fashion Marketing & Management	Multiple case study	2 companies	Fashion	UK
17	Narasimhan, Swink and Kim	2006	Journal of Operations Management	Survey (multi-industry)	224 respondents	Multi-industry	USA
18	Storey, Emberson and Reade	2005	International Journal of Operations & Production Management	Single case study	-	Fashion/Retailing	UK
19	White, Daniel and Mohdzain	2005	International Journal of Information Management	Single case study	-	Electronics	USA/Worldwide
20	Brown and Bessant	2003	International Journal of Operations & Production Management	Multiple case (longitudinal)	6 companies	Automotive and IT	USA
21	Warburton and Stratton	2002	Supply Chain Management	Single case study	-	Fashion	USA/Honduras
22	van Hoek, Harrison and Christopher	2001	International Journal of Operations & Production Management	Survey (multi-industry)	35 respondents	Multi-industry	UK/Benelux
23	Bal, Wilding and Gundry	1999	International Journal of Logistics Management	Survey + case study	70 respondents	Automotive	UK/EU
24	Meier, Humphreys and Williams	1998	International Journal of Purchasing & Materials Management	Delphi method	16 respondents	Multi-industry	USA
25	Stank and Lackey	1997	Journal of Business Logistics	Survey (single-industry)	263 respondents	Electronics and electrical	Mexico

Evidence from the selected articles is discussed in the next sections, while in Appendix A the relevant evidence used for the coding is reported and the descriptive statistics of the selected articles presented.

3.4 Systematic literature review: the evidence

The content analysis of the empirical evidence collected through this systematic review is reported in Table 9. According to the review protocol, a detailed coding has been done only with respect to those articles describing (high-involvement) partnerships that were making a precise reference to the relationship duration and the degree of turbulence in the business environment.

Table 9 - Empirical articles on high-involvement partnerships coded

Reference	High-Involvement	Duration	Degree of turbulence
Chiang, Kocabasoglu-Hillmer and Suresh (2012)	HI (1-2)	LT	LTU
Ogulin, Selen and Ashayeri (2012)	HI (1-3)	BOTH	HTU
Whitten, Green and Zelbst (2012)	HI (1-3)	BOTH	HTU
Chen and Chiang (2011)	HI (1-2)	LT	UNC
Zhang (2011)	HI (1)	LT	HTU
Tran (2010)	HI (1)	BOTH	HTU
Braunscheidel and Suresh (2009)	HI (1-2)	LT	HTU
Katzy and Crowston (2008)	HI (1-3)	BOTH	HTU
Khan and Pillania (2008)	HI (2-3)	BOTH	UNC
Baramichai, Zimmers and Marangos (2007)	HI (1-2-3)	BOTH	HTU
Hoyt, Huq and Kreiser (2007)	HI (1-2-3)	LT	HTU
Masson, Iosif, MacKerron and Fernie (2007)	HI (1-3)	BOTH	HTU
Oberoi, Khamba, Sushil and Kiran (2007)	HI (1)	LT	LTU
Paulraj and Chen (2007)	HI (1)	LT	LTU
Vázquez-Bustelo, Avella and Fernandez (2007)	HI (1-3)	BOTH	HTU

Doyle, Moore and Morgan (2006)	HI (1)	BOTH	UNC
Narasimhan, Swink and Kim (2006)	HI (1-2-3)	LT	UNC
Storey, Emberson and Reade (2005)	HI (1-2-3)	LT	LTU
White, Daniel and Mohdzain (2005)	HI (1-2)	BOTH	UNC
Brown and Bessant (2003)	HI (1)	LT	LTU
Warburton and Stratton (2002)	HI (1)	LT	LTU
van Hoek, Harrison and Christopher (2001)	HI (1-3)	BOTH	UNC
Bal, Wilding and Gundry (1999)	HI (2-3)	BOTH	LTU
Meier, Humphreys and Williams (1998)	HI (1)	LT	UNC
Stank and Lackey (1997)	HI (1)	LT	LTU

Legend:

High-Involvement	HI (1) = High-Involvement justified by knowledge sharing routines
	HI (2) = High-Involvement justified by relation-specific assets
	HI (3) = High-Involvement justified by self-enforcement governance mechanisms
Duration	LT = reference only to long-term partnerships
	ST = reference only to short-term partnerships
	BOTH = reference to both long-term and short-term partnerships
Degree of turbulence in the business environment	HTU = High degree of turbulence (radical market changes/dynamic markets)
	LTU = Low degree of turbulence (demand uncertainty on quantity and order variety)
	UNC = Unclear/Unspecified

According to the review results, a consistent portion (64%) of the analysed articles describes high-involvement relationships by considering at least two out of the three coding factors (knowledge sharing routines; relation-specific assets; and self-enforcement governance mechanisms). The development of knowledge sharing routines appears the most recurrent factor in the definition of high-involvement relationships in an agile supply chain. This result finds justification in the centrality of information sharing for integration with the suppliers (Braunscheidel and Suresh, 2009) and for the

synchronisation of supply and demand (Zhang, 2011; Chiang *et al*., 2012). The supply partnerships considered are also characterised by a modest level of investment in relation-specific assets (mostly dedicated to the process synchronisation) and by a consistent degree of collaboration and reciprocal cooperative attitude among partners (van Hoek *et al*., 2001; Hoyt *et al*., 2007; Ogulin *et al*., 2012).

The review outcomes highlight that in an agile supply chain the most widely adopted high-involvement supply relationship is deployed over a long-term horizon (from now on referred to as HI-LT). In fact, as reported in Table 10, 52% of the selected empirical papers mention HI-LT as the only high-involvement supply relationship adopted in an agile strategy and the remaining 48% also mention HI-LT as one of the adopted approaches. This is in line with the prevailing literature on buyer-supplier relationships (Dyer and Singh, 1998; Kotabe *et al*., 2003; Dyer and Hatch, 2006). According to this approach, established supply partnerships can have a strong leverage to cope with the uncertainties, as required in an agile supply chain strategy.

Table 10 - Classification of the selected articles referring to HI supply relationships

	Total number of articles	**% of the selected articles**
HI - LT only	13	52%
HI - BOTH (LT and ST)	12	48%

While the mainstream literature on buyer-supplier relationships has never devoted much attention to (high-involvement) supply partnerships deployed over the short-term (from now on referred to as HI-ST), this kind of relationship appears, together with HI-LT relationships, in 48% of the selected empirical papers. In line with the literature on agility, HI-ST partnerships appear to be widely used to achieve a response-capability that the existing supplier base is not able to provide (Goldman *et al*., 1995; van Hoek *et al*., 2001; Baramichai *et al*., 2007).

The literature review reports evidence of the impact of different degrees of turbulence on the business environment and the kind of supply partnership chosen in the agile supply chain.

HI-LT partnerships are developed more often when the agile supply chain has to face only minor business turbulences: 7 out of the 13 selected papers (54%) describing only HI-LT are reporting such a scenario while 3 papers (23%) present a scenario where the agile supply chain had to face major turbulences (Table 11). The remaining 3 papers (23%) did not provide any detailed reference for the coding.

Supply partnerships based on a portfolio approach, including both HI-LT and HI-ST, are used to a greater extent to face major turbulences: 7 out of the 12 selected papers (58%), while just 2 papers (17%) were describing only minor turbulences. The remaining 3 papers (25%) did not provide any detailed reference for the coding.

Table 11 - Classification of the selected articles based on references to business environment turbulence

	High-turbulence	**Low-turbulence**	**Unclear or unspecified**	**Total**
HI - LT only	3 23%	7 54%	3 23%	13 100%
HI – BOTH (LT and ST)	7 58%	2 17%	3 25%	12 100%

These results indicate that the differences in the kind of supply partnership adopted in an agile supply chain strategy are linked to the kind of uncertainty and change scenario the agility approach is designed to face (Zhang and Sharifi, 2007). Whenever agility refers to uncertainties mainly related to demand variability (Christopher, 2000; Stratton and Warburton, 2003; Zhang and Sharifi, 2007; Baker, 2008), HI-LT partnerships are likely to bring the resources, skills and commitment required to face the challenges of the change (Yusuf *et al.*, 2004; Storey *et al.*, 2005; Zhang and Sharifi, 2007; Braunschiedel and Suresh, 2009). However, whenever agility refers to unpredictable changes in market or customer demand, where the existing capabilities are no longer adequate (Gunasekaran, 1998; Bernardes and Hanna, 2009, Whitten *et al*., 2012) and where the company has "*to cope with unexpected changes, to survive unprecedented threats from the business environment*" (Zhang and Sharifi, 2000, p. 496), the company might be better off relying on a portfolio of HI-LT and HI-ST relationships, so as to

react quickly and effectively to the new market threats and opportunities (Baramichai *et al*., 2007). The competition in turbulent environments might require companies to "*act as switchboards that can quickly assemble, from a network of firms, a new combination of competencies to meet innovative project needs*" (Katzy and Crowston, 2008, p. 680).

Before moving to a more in-depth discussion of the characteristics of supply partnerships in an agile supply chain, it is important to highlight that the above percentages on the different kinds of partnership should not be considered as representative of their relative diffusion in business practice but that they are simply evidence of the presence of different kinds of partnership.

3.5 The paradox of "High-Involvement & Short-Term" relationships

The literature on supply relationships implicitly matches "high-involvement" with "long-term" as if they were two sides of the same coin. However, the challenges of an agile supply chain highlight the need for "High-Involvement & Short-Term" (HI-ST) relationships in order to overcome the rigidities and risks of long-term partnerships.

HI-ST relationships might appear as a paradox, given the time and effort required to develop a partnership, and facing such an apparent paradox is an important step in better understanding the relationships' characteristics.

If we look at the literature on strategic partnerships, we see how it stresses the importance of a long-term relationship as a reference for establishing a high-involvement collaboration. According to Kotabe *et al.* (2003), there are "*time compression diseconomies inherent in developing an efficient coordination and knowledge exchange between a buyer and a supplier. It takes time to develop the familiarity and expertise required for each partner to know when and how to draw on other's resources and when and how to contribute to resources*" (p. 295). Similarly, Dyer and Nobeoka (2000), in describing how Toyota developed a high-performance knowledge sharing network first in Japan and later in the US, stress that the development of such a network took a strong commitment – and significant resources – across many years.

Moreover, the literature on strategic partnerships also stresses the losses derived from abandoning an established high-involvement relationship, given that it might mean

losing many of the benefits – mainly in terms of learning – previously acquired. Such benefits may be distinguished as "redeployable" or "relational" (Mesquita and Brush, 2008). "Redeployable" benefits are related to capabilities and practices developed and used in a partnership that might be used later on in a different partnership, while "relational" benefits are specific to a given partnership, often based on idiosyncratic assets and knowledge that cannot be easily transferred to a new one[6] (Mesquita and Brush, 2008). Contrary to the "redeployable" benefits that are built on formal agreements and a formal exchange of information and knowledge, "relational" benefits are embedded in a rich environment difficult to imitate and therefore their uniqueness and "unredeployability" are key elements in terms of achieving and sustaining a competitive advantage (Dyer and Singh, 1998; Kotabe *et al.*, 2003; Lavie, 2006; Mesquita and Brush, 2008).

In this literature review, the papers describing agile supply partnerships (HI-ST) highlight four characteristics that contribute to overcoming the apparent paradox of those partnerships: 1) they are part of a portfolio of both short-term and long-term high-involvement relationships; 2) they have project-based features; 3) they are developed starting from a group of pre-qualified suppliers; and 4) they are supported by organisational procedures and IT tools (Table 12).

[6] The literature on strategic partnerships highlights that, given a short-term perspective, there are no or few *ex ante* incentives in heavily investing in building such idiosyncratic assets, limiting the potential benefits that partnerships can accrue (Bensaou and Anderson, 1999).

Table 12 - Main characteristics of HI-ST supply relationships

Characteristics	**References to selected empirical papers as from SLR**
Part of a portfolio of supply partnerships	White *et al*., 2005; Doyle *et al*., 2006; Baramichai *et al*., 2007; Masson *et al*., 2007; Katzy and Crowston, 2008; Tran, 2010; Whitten *et al*., 2012
Project-based features	White *et al*., 2005; Doyle *et al*., 2006; Baramichai *et al*., 2007; Masson *et al*., 2007; Katzy and Crowston, 2008; Ogulin *et al*., 2012
Pre-qualified supplier base	Doyle *et al*., 2006; Baramichai *et al*., 2007; Masson *et al*., 2007; Katzy and Crowston, 2008; Tran, 2010; Whitten *et al*., 2012
Organisational procedures/IT tools	White *et al*., 2005; Baramichai *et al*., 2007; Katzy and Crowston, 2008; Tran, 2010; Ogulin *et al*., 2012

HI-ST relationships have been found to always complement HI-LT relationships in an agile supply chain. This is not only due to a need to balance the supplier base in a supply portfolio approach (Kraljic, 1983; Olsen and Ellram, 1997; Dyer *et al.*, 1998; Day *et al.*, 2010). The process of terminating ongoing relationships and selecting new suppliers is costly and time-consuming (Doyle *et al*., 2006) and therefore no company is targeting only HI-ST. Even with respect to disruptive innovation, HI-ST supply relationships need to be matched with HI-LT supply relationships, given that "the firm not only needs to build new linkages but also to complement these with an established pattern of long-term relationships" (Phillips *et al.*, 2006, p. 451). Moreover, behind these HI-ST relationships, there is often the goal to renew the collaboration in the future. Therefore these short-term collaborations can be a first step towards potentially *de facto* long-term relationships. Through them, companies might be able to achieve the benefits of high-involvement relationships without having (or at least without having immediately) the rigidities of a long-term formal agreement (Ogulin *et al*., 2012).

HI-ST relationships have project-based features with a clear, shared and common goal and, once the goal has been reached, the partnership is dismantled, as described by the metaphor of the orchestra director who interacts very closely with the players he has selected for a given season, while dismantling the team once the season is over. "*Even though these relationships are not permanent, they are close*" (Christopher *et al.*, 2004,

p. 371). This is the case of the "virtual enterprise" that has been defined as a key element of an agile approach by Goldman, Nagel and Preiss (1995) as well as by van Hoek, Harrison and Christopher (2001) and that has been empirically found to be relevant for an agility approach by Zhang (2011). In the literature, HI-ST relationships have been often associated with large projects, such as constructions, where a major task has to be achieved in a short time by a team of multiple companies, normally under the guidance of a main contractor, a team that is dismantled after the objective is reached (Gadde and Dubois, 2010). During the period of the project, the partnering companies need to develop a deep collaboration in order to face the challenges of the common task, but they might not work again together, at least for some years, in joint, new projects. However, such project-based characteristics of HI-ST relationships are not confined to a few specific industries or to very large and non-recurring projects. They can be found in supply relationships from almost any industry, from fashion to automotive or high-tech. In the fashion collections development process there is a need, season after season, for "*balancing long-term partnerships with short-term, contract-based relationships*" (Tran, 2010, p. 148). Similarly, in the automotive industry, car manufacturers, in addition to their long-term partners, select partners just for a specific development programme, working very closely with them as long as the programme is running but reconfiguring the supply network with, eventually, new suppliers once the programme finishes (White *et al*., 2005, p. 406). Katzy and Crowston (2008), in making reference to the new product development in Virtuelle Fabrik, a high-tech Swiss cluster, highlight that "*the network engages in the recurring creation of short-term projects for the development of a new technology product*" (p. 681).

HI-ST relationships, given the short reaction time required by an agile strategy (Goldman *et al.*, 1995; van Hoek *et al.*, 2001; Christopher *et al.*, 2004), need to be developed starting from a group of pre-qualified suppliers. Normally they will be suppliers with whom the company is collaborating intensively on a recurrent, even if not necessarily continuous, basis (Christopher *et al*., 2004). The building up of a large pre-qualified list of suppliers may be based on formal and/or informal rules. The members of a network can explicitly develop "*organizational routines for marshalling competencies, that is, for determining which competencies from which partner companies were best suited to satisfy a specific customer's need, to launch projects, and*

to do so in short time" (Katzy and Crowston, 2008, p. 687). In other cases, the buying firm may carry out an informal selection of potential partners for a short-lived business opportunity (Ogulin *et al*., 2012) or even a general evaluation of a group of suppliers, as in the case of the fashion industry, where companies often target geographic areas that have got a strong reputation in a given fabrication process and then they select quickly (and eventually quickly change) their potential suppliers within the chosen area (Doyle *et al*., 2006, p. 278). A wide network of pre-qualified suppliers can also be achieved indirectly through the use of an intermediary. The company can establish a HI-LT relationship with an intermediary, accessing in this way a variety of suppliers and as a result obtaining the possibility of switching between suppliers in an almost completely smooth approach, sometimes even without being aware of it. Such an approach can be found in the fashion industry (Masson *et al.*, 2007), the Li and Fung company being a well-known example (Magretta, 1998; Hagel, 2002).

Finally, HI-ST relationships are supported by organisational procedures as well as IT investments aimed at creating a standard platform for supply relationship management, to reduce the loss of administrative and operational efficiencies related to a supplier change. As highlighted by Baramichai, Zimmers and Marangos (2007), agile supplier partnerships need to "*reduce the time used for locating and establishing the relationship with new suppliers by developing a standard framework and guidelines for supplier selection and contract generation processes*" (p. 345). Similarly, a standard IT platform may allow the suppliers to plug in and out of the buyer's ERP system without the need for any investment in a dedicated interface with each partner, establishing an effective information sharing with the existing suppliers as well supporting a fast and low-cost transition towards new suppliers (White *et al.*, 2005; Lewis *et al*., 2008). For instance, a third party hub accessible via web allows the buying companies to plug in to different suppliers and immediately seamlessly share information with them, so as to "*easily form electronic linkages with their trading partners and to reconfigure these when market conditions require*" (White *et al.*, 2005, p. 404). Many applications in cloud computing are allowing similar possibilities (Iyer and Henderson, 2010).

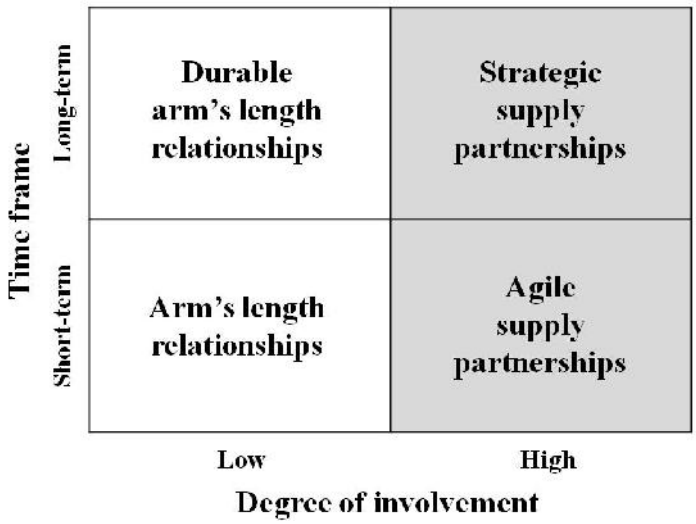
The characteristics of HI-ST supply relationships, as described above, allow overcoming the paradox of investing many resources (including time) in the

development of a relationship which has only a short-term horizon. In particular, the pre-qualified supplier basis and the development of standard organisational rules and standard IT tools reduce the time required to have fully operational high-involvement relationships. Moreover, these characteristics enable companies to overcome the loss of administrative and operational efficiencies related to a supplier change, given that these relationships are non-exclusive and, even more, given that the knowledge from one project/initiative can be transferred to the following ones.

3.6 Inputs for the field research

This SLR on the characteristics of supply relationships in an agile strategy reveals a taxonomy of supply relationships that goes beyond the established dichotomy of arm's length relationships (Low-Involvement & Short-Term) versus strategic partnerships (High-Involvement & Long-Term) (Dyer *et al.*, 1998). Building on previous frameworks by Dyer, Cho and Chu (1998), Gadde and Snehota (2000) and Baramichai, Zimmers and Marangos (2007), a 2x2 supply relationships portfolio model is proposed, making reference to the degree of involvement and to the duration of the supply relationship (Figure 7).

Figure 7 - Supply relationships portfolio model



This matrix highlights, besides the well studied arm's length relationships (Low-Involvement & Short-Term) and strategic supply partnerships (High-Involvement & Long-Term), two further options[7]: durable arm's length relationships (Low-Involvement & Long-Term) and agile supply partnerships (High-Involvement & Short-Term).Prior literature has already analysed "Low-Involvement & Long-Term" relationships, the so-called "durable arm's length" (Dyer *et al.*, 1998), which are distant relationships maintained over a long period of time. They appear to be justified, given that they "*minimize procurement (transaction) costs; allow suppliers to maximize economies of scale, which is critical… ; and maintain vigorous competition*" (Dyer *et al.*, 1998, p. 70).

This systematic literature review focuses on high-involvement relationships and specifically highlights "High-Involvement & Short-Term" relationships, here referred to as agile supply relationships, even if they are not the only kind of supply relationships adopted in an agile strategy. Agile supply partnerships appear as a potentially effective contributor towards agility, especially when the turbulence of the business environment is high (Maloni and Benton, 1997). These partnerships, while potentially short-lived, are not created by chance or in an extemporary way but are the result of deliberate investments (as to IT infrastructure, organisational procedures and/or supplier pre-qualification) aimed at acquiring future degrees of freedom.

The field research developed in the following chapters aims to build up empirical evidence highlighting the characteristics of agile supply partnerships in the fashion industry.

[7] This analysis is not focusing on the "close but adversarial" type of relationships, a dysfunctional supply relationship described by Mudambi and Helper (1998). "Close but adversarial" relationships are described as an incomplete type of "strategic partnership", given that they have the formal characteristics of a partnership without putting in place the related informal characteristics of trust and true collaboration. The "close but adversarial" relationship appears to be the opposite of the HI-ST partnerships here analysed, given that they lose the potential benefits of a high-involvement relationship because no true collaboration is started and, at the same time, they bind the company so it is stacked with the rigidities of a long-term agreement (Mudambi and Helper, 1998).

4 RESEARCH METHODOLOGY

4.1 Introduction

The Systematic Literature Review (SLR) identified empirical evidence that, in an agile strategy, companies develop selectively "High-Involvement & Short-Term" supply relationships (i.e. agile supply partnerships) besides the more widely adopted "High-Involvement & Long-Term" supply relationships (i.e. strategic partnerships). Building on such evidence, the field research analyses the characteristics of supply partnerships, and in particular of agile supply partnerships (ASPs), in the fashion industry.

The fashion industry has been chosen because it is an industry where agility is very relevant, given that "*by their very nature, fashion markets are volatile and difficult to predict*" (Christopher *et al.*, 2004, p. 370). Moreover, in this industry agility is a competitive strength as the uncertainty characterising the business is also the result of a proactive strategy by market leaders aimed at "*creating uncertainties that other competitors are unable to deal with*" (Yi *et al.*, 2011, p. 273).

The context in which the field research is carried out is that of the Macerata-Fermo district, the largest footwear district in Italy.

The rest of the chapter is organised as follows: the research approach, the research questions and model, the operationalisation of key variables and the research design. Each phase of the research design is then analysed in-depth, with a focus on the case studies and on the quality criteria.

4.2 Research approach

This research has been developed as an exploratory research where the questions arise both from theory and practice.

4.2.1 Engaged scholarship

The research has been carried out as an "informed basic research" according to the Engaged Scholarship approach (Van de Ven, 2007). It has been designed as problem- and theory-driven, with the goal of providing a contribution both to theory and practice

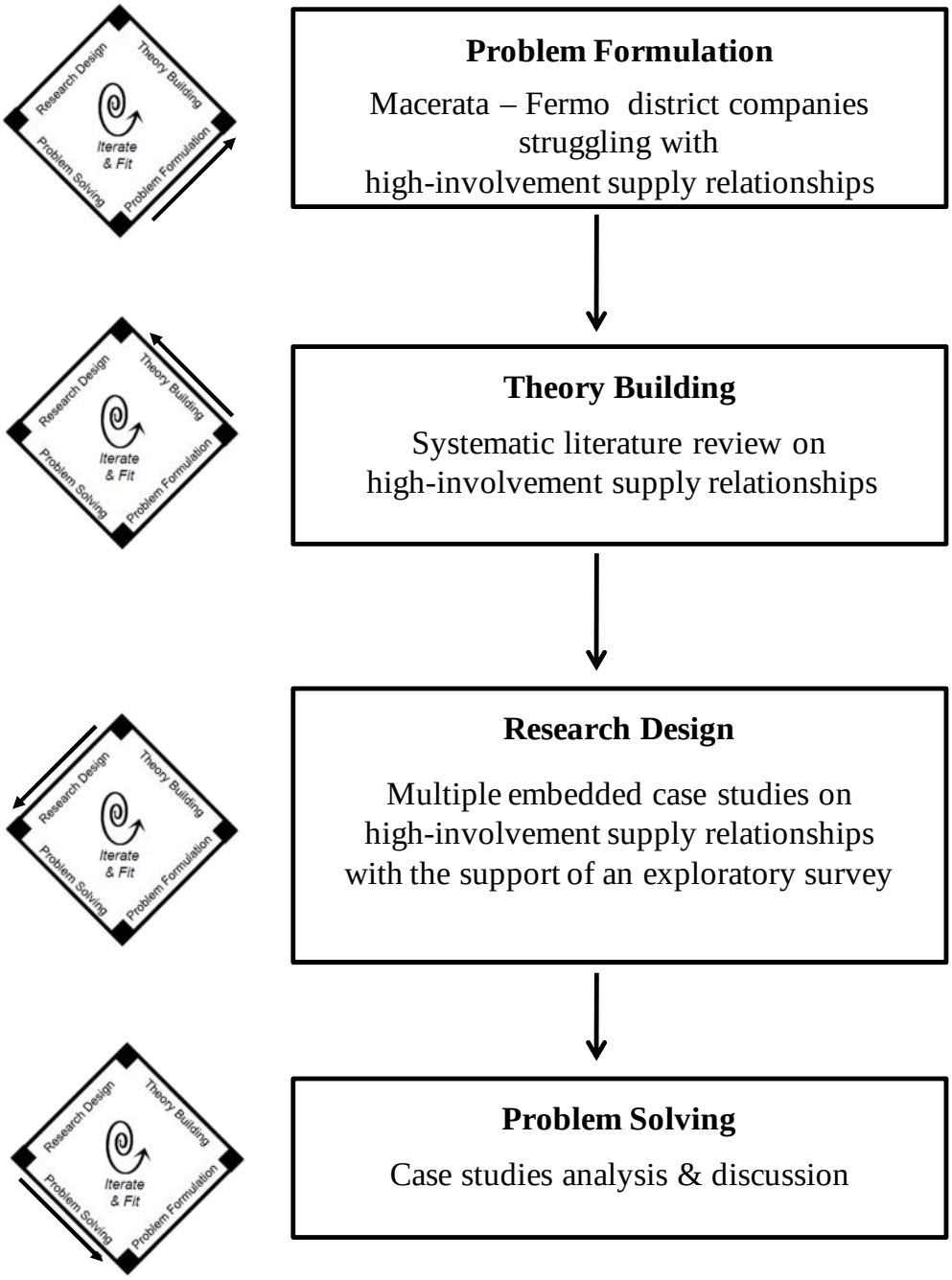
of supply partnerships in an agile strategy, in particular with respect to "High-Involvement & Short-Term" supply relationships (Figure 1).

The problem formulation arose in September 2010, from a meeting with the representatives of the Industrial Associations of Macerata and Fermo. It appeared that, while high-involvement supply relationships were considered by most district companies as an important support in the collection development and launch, there was no established or shared approach on how to manage them, considering that the constantly changing fashion trends are challenging the establishment of stable supply partnerships.

The theory building element of the research was based on an SLR on supply partnerships, given that there are contrasting positions on the characteristics supply partnerships should have in order to foster an agile strategy (Goldman *et al.*, 1995; Gunasekaran, 1998; Christopher, 2000; Zhang and Sharifi, 2007; Braunschiedel and Suresh, 2009). More specifically, the literature on buyer-supplier relationships has not dealt openly with "high-involvement & short-term" partnerships, focusing as it does almost exclusively on "high-involvement & long-term" (Dyer, 1997; Saxton, 1997; Dyer and Singh, 1998). Literature on the agile supply chain has presented quite controversial positions on whether agility is better achieved through long-term partnerships with a reduced number of trustworthy suppliers so as to leverage their commitment for facing the challenges and time-pressure which characterise the agile strategy (Yusuf *et al.*, 2004; Zhang and Sharifi, 2007) or, given the scenario of change and uncertainty characterising an agile strategy, through more flexible short-term collaborations (Goldman *et al.*, 1995; Christopher *et al.*, 2004).

The research design, given that the study of agile supply chains is still at a nascent stage, has taken an exploratory approach to provide an in-depth analysis of the characteristics and determinants of supply partnerships, and specifically on "agile supply partnerships". The goal is to obtain initial evidence on why footwear companies are targeting a short-term horizon for some of their high-involvement relationships. As described in more detail in the following sections of this chapter, the core of the research design is represented by multiple embedded case studies (Eisenhardt, 1989; Yin, 2009).

Figure 8 Application of the "Engaged Scholarship" approach



Source: Adapted from Van de Ven (2007)

The problem solving aims to be at the same time a contribution to theory and a support for practice. The contribution to theory relates to agility strategies as well as buyer-supplier partnerships, as is presented in this work. The support for practice relates to the

reasons for establishing ASPs, as well as a few practices that can help in managing them effectively, which will be presented to the Macerata-Fermo district companies in October 2013.

4.2.2 Philosophical perspective

This research – in line with the Engaged Scholarship approach (Bechara and Van de Ven, 2007) – takes a Critical Realist philosophical perspective based on ontological Realism and epistemological Relativism (Blaikie, 2003; Aastrup and Halldórsson, 2008). According to Critical Realism, reality is "*both intransitive (existing independently of humans) and stratified ... in the three domains of the real, the actual, and the empirical*" (Mingers, 2000, p. 1261).

In line with the Realist approach to social enquiry, as described by Blaikie (2003), this research begins "*in the domain of the actual, with observed connections between phenomena*" (p. 163). In particular it looks at the activities carried out by the fashion firms with the focus on the different kinds of high-involvement supply relationships they develop. Then it moves "*to postulate the existence of 'real' structures and mechanisms which, if they existed, would explain the relationships*" (Blaikie, 2003, p. 163), with an analysis of the relational capabilities required to develop high-involvement supply relationships with respect to different durations. Then the research attempts "*to demonstrate the existence and the operation of these structures and mechanisms*" (Blaikie, 2003, p. 163) with a comparison of multiple high-involvement supply relationship cases developed by six companies from the same business setting (the Macerata-Fermo district), so as to limit the variables to control and eliminate alternative explanations.

The Critical Realist perspective can embrace multiple research methods (Sayer, 2000). This research uses both an "extensive" method to look at the general characteristics of a phenomena (namely an SLR and a preliminary survey on agility drivers and agile capabilities characterising the footwear companies of the Macerata-Fermo district) and an "intensive" method to investigate the underlying mechanisms (namely multiple embedded case studies on the high-involvement supply relationships). Such an approach highlights the limits of a large part of the literature on the agile supply chain which,

following a positivist approach, is based on multi-industry surveys that want to give "objective evidence" to agile capabilities and practices without taking into account the specificities of the different business contexts (especially regarding the agility drivers the companies are facing) and without looking at the underlying mechanisms that allow companies to achieve agility.

4.2.3 Research strategy

Edmondson and McManus (2007) advise that the overall research strategy should seek a methodological fit. That is to say, it should maintain internal consistency among the four key elements of field research: prior work, research questions, research design and contribution to the literature.

The prior work lies in the intersection between the well established literature on supply partnership and the less consolidated literature on agile strategies, and in particular on agile capabilities and practices. Therefore, given the gaps and contradictions related to "supply partnerships within an agile strategy" as highlighted in Chapter 3, the state of prior research can be considered as still at a nascent stage.

Having established that theory in this area is at a nascent stage, the research questions, as reported at the beginning of this chapter, are targeted towards "*understanding how a process unfolds, developing insight about a novel or unusual phenomenon, digging into a paradox, and explaining the occurrence of a surprising event*" (Edmondson and McManus, 2007, pp. 1161-1162). Besides looking in general at why supply relationships are developed within an agile strategy, the research questions are aimed at the definition of "agile supply partnerships", by tackling the paradox of supporting high-involvement relationships without the rigidity of a long-term commitment.

The research design, bearing in mind that this research area has to deal with an overall framework and with specific constructs that are not well defined, is based on an exploratory approach aimed at providing an in-depth analysis of the phenomenon. Specifically, after an SLR and a preliminary survey, the field research has been developed as a multiple embedded case study design (Eisenhardt, 1989; Yin, 2009), with the supply relationships established by the focal firm as the unit of analysis. The

case studies are mainly built upon interviews with key informants who are managing the supply relationships – normally the entrepreneurs – and, in a few cases, with the support of the purchasing data over six years.

The contribution to the literature, in line with the research's methodological fit approach, aims at being "*a suggestive theory, often an invitation for further work on the issue or set of issues opened up by the study*" (Edmondson and McManus, 2007, p. 1160). The contribution of this study, while specific to the fashion industry, calls for further work to be generalised to other industries where uncertainty and changes are related to different drivers. That might be the case in fast clockspeed industries (such as high-tech) where the challenges of managing high-involvement relationships in a short-term scenario could be affected by path dependency in technological innovation (Danneels, 2002; Thrane *et al*., 2010) as well as by the important role played by supplier-driven innovation (Wagner, 2012).

4.3 Research objectives, research questions and research model

This research looks at high-involvement supply relationships (i.e. supply partnerships) within an agile strategy. The objective is to analyse how the commitment related to high-involvement supply relationships can fit with the degrees of freedom required by agility. In fact high-involvement supply relationships are an important leverage for competitiveness (Dyer and Nobeoka, 2000; Kotabe *et al.*, 2003) but at the same time they might prevent the company from adopting the changes required by a turbulent market (Gadde and Snehota, 2000; Baramichai *et al.*, 2007). While most of the literature takes for granted that a high-involvement supply relationship refers to a long-term horizon, this research investigates those supply partnerships that, in order to preserve agility, are deployed over a short-term horizon, recognizing that effective supply chain strategies requires a portfolio of supply relationships (Kraljic, 1983; Bensaou, 1999) involving both high- and low-involvement as well as long- and short-term.

Following the supply relationships portfolio approach (Gelderman and van Weele, 2005; Drake *et al*., 2013), this research aims to identify how the characteristics of supply partnerships are impacted on by the supply categories characteristics as well by the strategic approach of the company (in this case, by its agile profile characteristics).

At the same time the organisational processes related to the actual management of supply relationships are not taken into account.

In line with such a research objective and based on the evidence of the SLR, this research investigates the characteristics of supply partnerships in the fashion industry focusing on the two following questions:

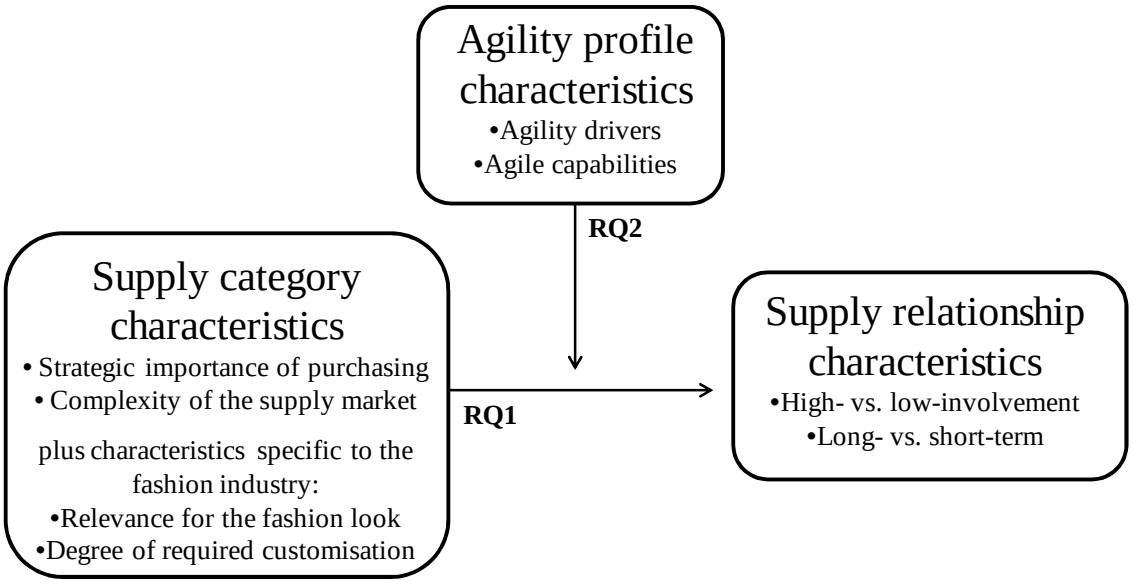
> RQ 1: How do fashion firms decide on the degree of involvement in supply relationships?
>
> RQ 2: How do fashion firms decide on the duration of supply partnerships?

RQ 1 looks at the factors driving the decisions on the degree of involvement in supply relationships, by considering a continuum between low-involvement (arm's length relationship) and high-involvement (partnership). In particular, given that companies are developing a portfolio of relationships in order to manage their suppliers (Bensaou, 1999) and that Kraljic's matrix (Kraljic, 1983) has become "*the standard in the field of purchasing portfolio models*" (Gelderman and van Weele, 2005, p. 20), this analysis will be based on the two variables used in the Kraljic matrix, namely: the importance of purchasing and the complexity of the supply market. As the focus is on the fashion industry, the analysis will focus also on supply category characteristics specific to such an industry. In particular, because of the relevance of fashion trends (Sproles, 1981; Weller, 2006) and the time pressure characterising the collection launch (Tran, 2010), this research will also look at characteristics that impact on the fashion look as well as on the collection production timing.

RQ 2 looks at the factors driving the decisions on the duration of supply partnerships, considering a continuum between long-term (strategic partnerships) and short-term (agile partnerships). Based on the SLR in Chapter 3, it is expected that ASPs are more likely to be developed when the focal company's agile strategy is designed to face a high-turbulence scenario. Moreover, the presence of ASPs is likely to be related to the relevance of agility in the firm's strategy and, therefore, to the presence of other agile capabilities. From the analysis of agility in the fashion industry developed in Chapter 2, the companies that are building their agile strategy mainly on a high collection renewal rate are expected to be those for which ASPs are more relevant.

These two research questions are framed in the model represented in Figure 9.

Figure 9 - Research model



4.4 Operationalisation of key constructs

The key constructs used in this research are "supply category characteristics", "supply relationship characteristics" and "agility profile characteristics". Each of these is discussed below, providing definitions and explaining how they have been operationalised for the purpose of this research.

4.4.1 Operationalisation of supply category characteristics

The characteristics of the different supply categories are operationalised in terms of the two variables that are used in Kraljic's matrix (Kraljic, 1983; Olsen and Ellram, 1997) – namely the importance of purchasing and the complexity of the supply market, as well as in terms of two variables specific to the fashion industry, namely the relevance for the fashion look and the degree of required customisation. The selection of the variables specific to the fashion industry, as well as the identification of the average values of these four variables for each supply category, have been supported by the footwear experts of the Macerata and Fermo Industrial Associations, with confirming evidence acquired during the interviews with key informants (see Table 13).

The strategic importance of purchasing can be evaluated in terms of "*the value added by product line, the percentage of raw materials in total costs and their impact on profitability*" (Kraljic, 1983, p. 110). In this research the strategic importance of purchasing is operationalised in terms of the percentage of the category item cost on the total cost of the shoes.

The complexity of the supply market can be evaluated in terms of "*supply scarcity, pace of technology and/or materials substitution, entry barriers, logistics cost or complexity, and monopoly or oligopoly conditions*" (Kraljic, 1983, p. 110). In this research the complexity of the supply market is operationalised in terms of the risk of supply disruption due to lack of raw materials/components during the fashion season.

The relevance for the fashion look, similarly to the strategic importance of purchasing, highlights the potential impact of the supply category on the overall results of the company given its relevance for the collection's competitiveness. In this research the relevance for the fashion look is operationalised in terms of the impact of the supply category item on the aesthetic look of the shoes as well as in terms of its relevance for the values the brand/collection wants to transmit.

The degree of required customisation, similarly to the complexity of the supply market, highlights the possibility that such a supply category creates bottlenecks and delays the development or the production of a given collection. In this research the degree of required customisation is operationalised in terms of the extent to which customisation in a given supply category is requested, from the inclusion of the footwear brand logo up to the actual co-design of the shoes' components.

Table 13 - Operationalisation of supply category characteristics

Variables	Indicators
Strategic importance of purchasing	Percentage of the category item cost on the total cost of the shoes
Complexity of the supply market	Risk of supply disruption due to lack of raw materials or components during the fashion season
Relevance for the fashion look	Impact on the aesthetic look of the shoes as well as in terms of relevance for the values the brand/collection wants to transmit
Degree of required customisation	Extent to which customisation in a given supply category is requested

Footwear experts from Macerata and Fermo Industrial Associations helped to identify five supply categories that have the biggest impact on the development, launch and delivery of the footwear fashion collections. These supply categories are: external leather, internal leather, soles (leather and non-leather), style and the shoes assembly.

4.4.2 Operationalisation of supply relationship characteristics

The operationalisation of the characteristics of supply relationships takes into account both the degree of involvement and the duration of the supply relationships.

The operationalisation of high-involvement in supply relationships is based on the general definitions used for the SLR carried out in Chapter 3 with respect to the specific context of the Macerata-Fermo footwear district. In particular, high-involvement supply relationships were conceptualised based on three independent factors (Dyer, 1997; Dyer and Singh, 1998): (1) inter-firm knowledge sharing routines; (2) investment in relation-specific assets; (3) use of trust-based mechanisms as governance mechanisms. The presence of at least one of these factors in a supply chain relationship discloses a high-involvement relationship. Their operationalisation is described here below and reported in Table 14.

An inter-firm knowledge sharing routine (Dyer and Singh, 1998) is considered to be present whenever the field data have highlighted a strong buyer-supplier collaboration in the development of the seasonal fashion collection as well as in the production and delivery phase. More specifically, in the development phase, inter-firm knowledge sharing routines refer mainly to the supplier's contribution to product development and industrialisation. In the production and delivery phase, they refer to the collaboration in the rescheduling of production and delivery plans related to the frequent "emergency fighting" mainly due to lack of raw materials or components for a given model.

An investment in relation-specific assets (Williamson, 1985; Dyer, 1997; Saxton, 1997) is considered to be present whenever the field data have highlighted a shared investment related to an equipment/tool requested for a customised component or for a specific processing (therefore required for complying with the footwear company's requirements), as well as related to IT hardware and software supporting intercompany data exchange (therefore required for smoother joint planning).

A trust-based governance mechanism (Zaheer and Venkatraman, 1995; Dyer, 1997; Panayides and Lun, 2009) is considered to be present whenever the footwear company is managing the supply relationship – and in particular the emergencies and the non-compliances – with loose reference to a formal contract and a strong reliance on informally balancing duties and rewards. However, given that supply relationships in the Macerata-Fermo district – as well as in most Italian industrial districts (Becattini, 2002) – are characterised by a high degree of informality, a trust-based governance mechanism is considered to be present when the formal contract concentrates just on a few very basic elements (mainly quality, quantity and price) while leaving informal the management of the supply relationship, which includes key elements such as delivery timing, schedule replanning and unconformities settlement.

Table 14 - Operationalisation of high-involvement relationships

Variables	Indicators
Inter-firm knowledge sharing routine	In the collection development, the contribution to product development and industrialisation; In the production and delivery phase, collaboration in the rescheduling of production and delivery plans related to the frequent "emergency fighting".
Investment in relation-specific asset	Investment in moulds or other tools dedicated to the manufacturing of customised items; Investment in equipment required for customised processes; IT hardware and software supporting data exchange.
Trust-based governance mechanism	Reliance on verbal agreement (versus formal contracts) with respect to areas such as: delivery timing; schedule replanning; or unconformities settlement.

The operationalisation of the duration in supply partnerships is based on two variables: the length of the supply partnership and its stability. A long duration and a high stability of the supply partnership are both required for discussing a long-term supply partnership while either a short duration or a low stability of the supply partnership discloses a short-term relationship (Table 15).

The length of a supply relationship is evaluated with respect to the industry clockspeed (Fine, 1998; Guimaraes *et al.*, 2002). In the case of the fashion industry, the clockspeed is related to the development and delivery of the seasonal fashion collections, normally two collections per year (Spring/Summer and Autumn/Winter). Therefore, based on a shared industry practice, in this research a supply relationship with an interrupted sequence of purchasing orders for more than four seasons is considered to be long term. The length of the supply relationship might go beyond the duration of each individual contract, in case the supply contract is renewed season after season. In fact in the fashion industry the supply contracts are in most cases lasting for a single fashion season, with a few exceptions mainly related to the services from the stylists.

The stability of a supply relationship is evaluated in terms of volatility of purchasing orders assigned to a given supplier. Due to the changes that characterise the fashion

industry, the stability of the supply relationship might be independent of any quality/delivery underperformance of the supplier and be related just to the unfitness of a given raw material or component to the fashion trend of a particular season. The volatility of purchase orders is evaluated in relative terms among the different supply categories.

Table 15 - Operationalisation of supply relationships duration

Variables	Indicators
Length of the supply relationship	Length of uninterrupted sequence of purchasing orders assigned to a given supplier (number of consecutive fashion seasons).
Stability of the supply relationship	Volatility of purchasing orders assigned to a given supplier (reverse indicator: a high volatility means low stability).

4.4.3 Operationalisation of agility profiles

The agility profiles operationalisation takes into account both agility drivers and agile capabilities.

As already anticipated in Chapter 2, the operationalisation of the agility drivers is based on the generic agility performance indicators as highlighted by Swafford, Ghosh, and Murthy (2006), adapted on the basis of the indications of the Macerata-Fermo Industrial Associations in order to take into account the specificities of the development of the footwear fashion collection and of the related production and delivery activities. In particular the identified agility drivers are:

- collection renewal;
- replenishment orders from the retailers;
- “non-traditional” collections.

The renewal of the seasonal collection is a very relevant agility driver, given that a collection being continuously renewed is a comprehensive response to the challenges posed by the constantly changing fashion trends. Such an agility driver impacts mainly on new product development as the greater the percentage of new items with respect to those “carried over”, the greater the pressure on the product development process.

Specifically, the collection renewal requires agility in the development of prototypes and samples with respect to the sourcing of many components in very small quantities and the management of a very fragmented production planning. Moreover, most of the selection among the prototypes and samples developed tends to be carried out as late as possible, normally after the fashion fair, requiring the company to be very agile in order to achieve in time the target production amount of the selected collection items. The relevance of collection renewal is operationalised in terms of the percentage of new items included in the seasonal fashion collection.

The level of replenishment orders from the retailers is a very relevant agility driver as it puts pressure on the production planning towards the end of the fashion season. The retailers tend not to commit to all their purchases immediately after the fashion fairs but place a larger and larger share of their orders to footwear companies during the fashion season, when there is evidence of the best selling items in the collection. This approach is similar to what, in the fashion industry, is known as lean retailing, thus transferring risks from the retailers to the footwear companies (Abernathy *et al*., 2000; Fisher *et al*., 2000; Birtwistle *et al*., 2006; Drake and Marley, 2010). An increase in the relevance of the replenishment orders within the overall seasonal order portfolio received by footwear companies is an agility driver that impacts mainly on the planning and production phase. To be able to comply with replenishment orders, footwear companies – and their suppliers – need to be able to deliver to their customers in a very short time, reducing the lead-time for the sourcing and production processes without being able to rely very much on stock, given that holding stock in the fashion industry is very risky as it can quickly become obsolete. The relevance of replenishment orders is operationalised in terms of the percentage of replenishment orders in the overall seasonal order portfolio.

The launch of “non-traditional” collections (i.e. collections in addition to the two classic “Autumn/Winter” and “Spring/Summer” collections) is a relevant agility driver as it allows following (and even steering) the fashion trends. In its radical applications, such an approach is known as a fast fashion strategy (Barnes and Lea-Greenwood, 2006; Byun and Sternquist, 2008; Tokatli, 2008; Bhardwaj and Fairhurst, 2010). This agility driver impacts both on new product development and on production/delivery. However,

changes from one fast-collection to the other are quite limited and also the width and depth of each fast-collection are quite limited, keeping under control the complexity in the development process. At the same time the production and delivery targets are defined by the company – normally based on a direct link with the retailers – and they are planned in a conservative way so as not to leave any stock when the following collection is presented, mitigating the challenges in the sourcing and production stage. The relevance of "non-traditional" collections is operationalised in terms of the percentage of turnover coming from the these collections within the overall company turnover.

A synthesis of the agility profiles is reported in Table 16.

Table 16 - Operationalisation of agility drivers

Construct	Indicators
Collection renewal	Percentage of new items presented in a seasonal collection.
Replenishment orders	Percentage of replenishment orders received by the retailers.
"Non-traditional" collections	Percentage of the yearly turnover represented by turnover of a "non-traditional" collection.

The agility drivers mentioned above will be jointly evaluated, through a cluster analysis, to define the degree of turbulence they have to face, arriving at the definition of a low and high-turbulence scenario.

The operationalisation of agile capabilities related to the management of the supply network as carried out by the footwear companies in the Macerata-Fermo footwear district has been identified with the support of experts from the local Industrial Associations, and it takes into account the following elements:

- local supply network;
- postponement of purchase orders.

The location of the supply network can have a major positive impact on agility when it is characterised by proximity among the supply chain players (Byoungho, 2004; Christopher *et al.*, 2004; Stratton and Warburton, 2006). In the Italian footwear industry there is a progressive shift of the manufacturing activities towards Eastern Europe and the Far East (mainly China and India) (Cutrini *et al.*, 2012), challenging the traditional agile capabilities based on a local/district supply network. To take into account the specificities of the footwear industry, based on the suggestions of the footwear experts from the Industrial Associations, the research focuses on the offshoring decisions in three main production phases: the sample production, cutting & sewing activities and final shoes assembly. The sample production (as well as the initial prototype preparation) is the phase with the greatest impact on company agility as prototypes and samples need to be made (and often made again) under a very strong time pressure. The cutting and sewing can be planned more easily, even if they are offshored, because they are quite simple and straightforward activities and therefore have a limited impact on agility. The final shoes assembly can have a significant impact on agility as it requires all the 50 or more components making up the shoes. Therefore in the case of a replanning of the production schedule, this can be negatively affected if this final phase is carried out far away from the district where all these components are both more quickly and easily available. Moreover, the impact of offshoring on agility differs, based on the location where it is carried out. From the advice given by experts from the Industrial Associations of Macerata and Fermo, the research has taken into account two major offshoring scenarios: nearby locations (mainly Eastern Europe, North Africa and Turkey) that have a short lead-time but a less attractive labour cost, and faraway locations (mainly India, China and the rest of the Far East) that can offer an even lower labour cost but end up increasing the lead-times and reducing agility to a major extent. Therefore the presence of a local supply network is operationalised in terms of the amount of activity (measure in terms of number of shoes pair) carried out in the District with respect of the above mentioned phases: prototyping and sampling; cutting and sewing; and final shoes assembly.

The timing of the orders to the suppliers has a major impact on agility, as it is considered to be one of the main organisational capabilities a footwear company has to develop to be agile. Tran (2010) and Christopher, Lowson and Peck (2004), in their

analysis of the fashion industry, highlight the relevance of production planning to offer the fashion product with the right timing and the key role of postponement. It appears, that a footwear firm that is able to postpone the purchasing of the key components as well as the launch of production orders to external contractors will be more agile as it is facing the fashion trends with a limited amount of stock and, at the same time, needs to be more agile as it has to deliver in any case within the short time windows requested by retailers. The time reference selected to evaluate postponement is that of the main season fashion fairs. The fewer components a company purchases or the fewer production orders it launches before the fashion fairs, the more agile it is with respect to the fashion trends that become evident during these events. On the basis of the indications from the experts of the Macerata and Fermo Industrial Associations, the timing of the purchase of external leather and the timing of the launch of production orders have been identified as very relevant for agility. External leather is the single component that has the greatest impact on the look of the shoes and is most affected by fashion trends. Its purchase represents a strong commitment towards a few items of the seasonal fashion collection. Similarly, the launch of production orders is related to specific models and represents a firm commitment towards a given range of model – commitment that cannot be easily modified afterwards. Therefore the presence of a postponement in purchase orders is operationalised in terms of the percentage of the external leather's requirement and of the percentage of the production orders launched before the fashion fairs amount of activity (with respect to overall requirements and launches planned for the whole fashion season).

These agile capabilities will be jointly evaluated using cluster analysis to distinguish between those companies that have developed strong agile capabilities and those which have not. This will be used as a proxy to determine if companies consider agility as a strategic priority or not.

A synthesis of the agile capabilities is reported in Table 17.

Table 17 - Operationalisation of agile capabilities

Construct	Indicators
Local supply network	Percentage of prototyping and sampling activities carried out in the Macerata-Fermo district (based on the number of shoes pair); Percentage of cutting and sewing activities carried out in the Macerata-Fermo district (based on the number of shoes pair); Percentage of final shoes assembling carried out in the Macerata-Fermo district (based on the number of shoes pair).
Postponement of purchase orders	Percentage of the external leather's requirement issued before the fashion fairs; Percentage of the production orders launched before the fashion fairs.

The joint analysis of agility drivers and agile capabilities is used to build different agility profiles relevant for the management of agile supply partnerships (ASPs). Based on the evidence from the SLR developed in Chapter 3, it is expected that ASPs are not relevant in a low-turbulence scenario. At the same time, it is expected that ASPs are likely to be applied only if agility represents the strategic priority for the company. Therefore the footwear companies will be classified with respect to three major agility profiles:

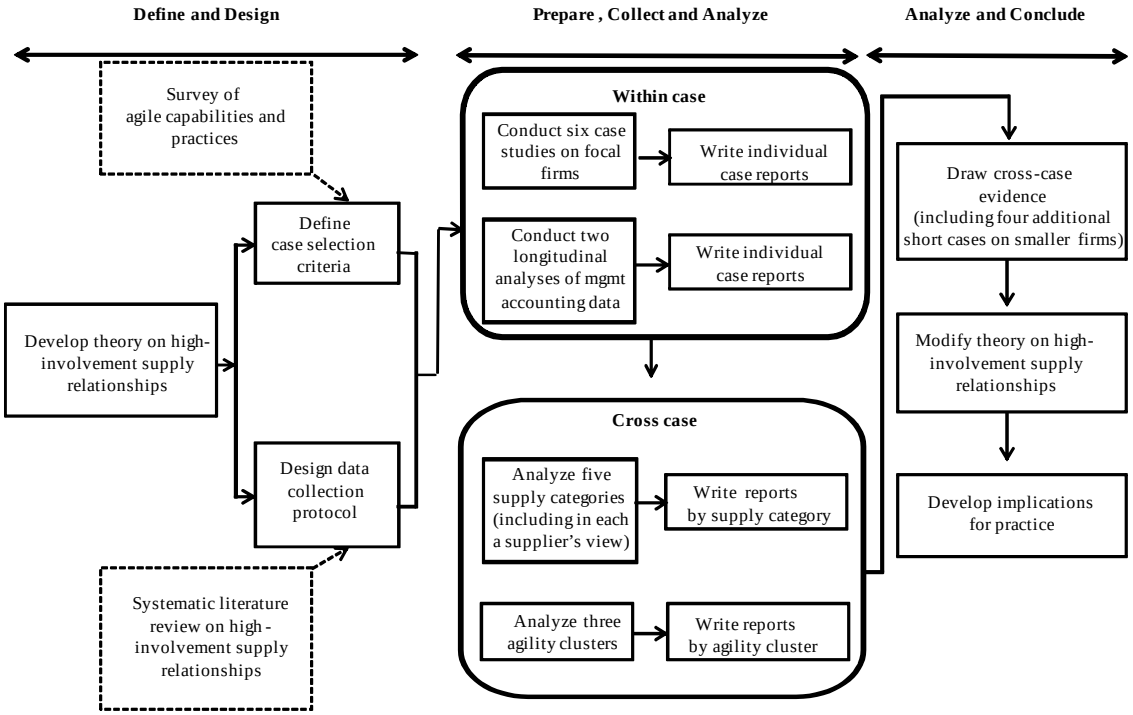
- companies that face a low-turbulence scenario, where the development of ASPs is expected not to be relevant;
- companies that face a high-turbulence scenario and have not agility as their strategic priority, where the development of ASPs is expected to relevant but not likely;
- companies that face a high-turbulence scenario and have agility as their strategic priority, where the development of ASPs is expected to be relevant and likely.

4.5 Research design

The study is based on a multiple case study research design including three different steps (Yin, 2009):

- "define and design";
- "prepare, collect and analyze";
- "analyze and conclude" (Figure 10).

Figure 10 - Overall research design



Source: Adapted from Yin (2009)

The "define and design" step is made up of an SLR of high-supply relationships, an exploratory survey on agility in the Macerata-Fermo district and, on these bases, the definition of the data collection protocol as well as the case selection.

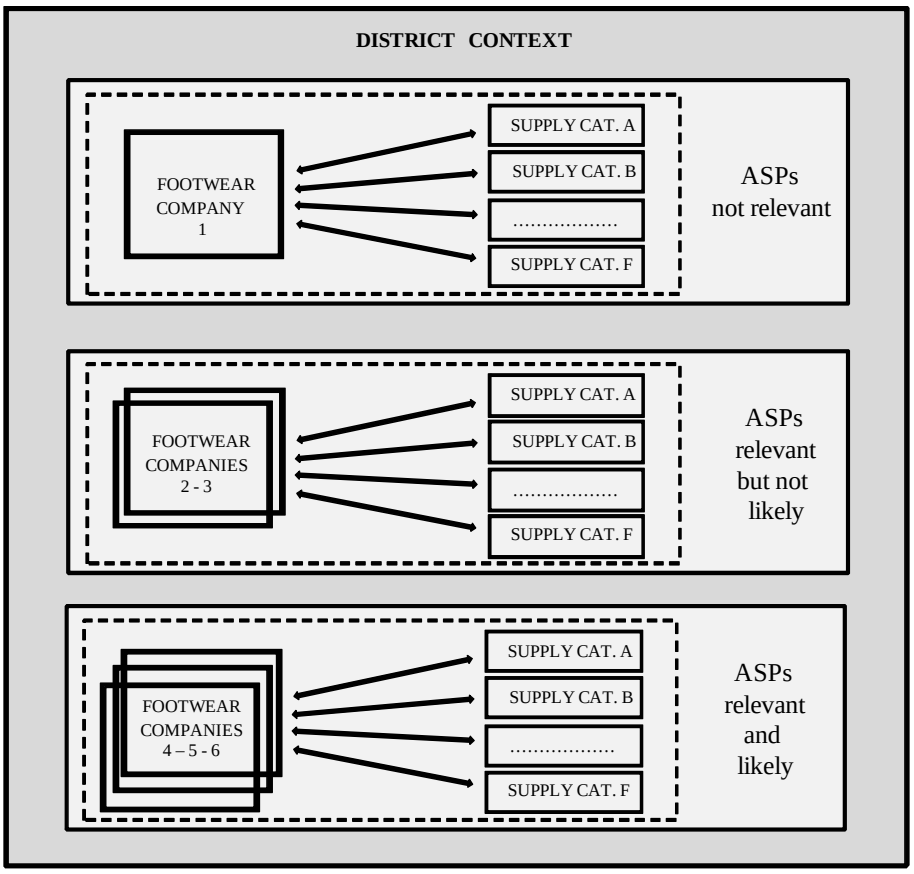
The "prepare, collect and analyze" step is represented by the data collection and the data analysis for the multiple embedded case studies with a sequence of within-cases

analysis and cross-case pattern search (Eisenhardt, 1989). Specifically, the data collection is aimed at the preparation of six individual case reports based on interviews and two reports based on a longitudinal analysis of management accounting data on company purchases. Based on these individual reports, eight cross-case reports will be developed: five by supply category and three by agility profile.

The "analyze and conclude" step is aimed at the completion of the cross-case comparison (including additional consideration from four short cases of smaller companies) and at the definition of the research contribution to theory and practice.

The case studies, which represent the core of this research, have been designed as multiple embedded case studies where, within each company, different supply categories are analysed. The supply relationships (selected as the unit of analysis) are depicted by the arrows shown in Figure 11.

Figure 11 - Structure of the multiple embedded cases



Source: Adapted from Yin (2009)

4.6 The preliminary phases

The preliminary phases are aimed at shaping the main field research, i.e. the case study research on the supply relationships established by the footwear companies in the Macerata-Fermo district. These preliminary phases are now described individually.

4.6.1 Systematic literature review

The SLR investigates the empirical literature on the characteristics a supply partnership should have to support agility. The SLR, as developed in Chapter 3, has proposed a theoretical model analysing supply partnerships in terms of degree of involvement and duration. Such a theoretical model has been taken as the reference for developing the semi-structured interviews used for developing the case studies.

4.6.2 Exploratory survey

The exploratory survey investigated the agility drivers these footwear companies are facing as well as the agile capabilities developed to face those drivers. It is structured in three sections:

- part I with the general data on the company (turnover, geographical scope, customer focus, etc.);
- part II with the data related to the agility drivers (collection renewal, "non-traditional" collections and replenishment orders);
- and part III with the data related to agile capabilities (location of the supply network and timing of sourcing and production decisions).

The questionnaire is reported in Appendix B.

The survey was validated by having eight companies' members from the Boards of Macerata and Fermo Industrial Associations filling in the questionnaire.

The survey was carried out in the spring of 2011 and targeted at the 723 shoes companies that at December 31st 2010 were registered as having their main activities in "shoes production" in the provinces of Macerata and Fermo (as taken from the register of the Chambers of Commerce – code 15.20 "*Fabbricazione di calzature*").

All these companies were contacted by phone, with the support of the local Industrial Associations (Confindustria Macerata and Confindustria Fermo), and were presented briefly with the aim of the research. Of the 723 approached, 102 of them declined their availability for the research or were unreachable, while the other 621 received the questionnaire (either by mail or fax). After three weeks the non-responding companies were contacted a second time as a reminder. As a result 87 valid questionnaires were received, representing 12% of the targeted population.

The responses to the survey have been divided by company turnover in the following three categories: medium-large companies (with a turnover above €10 million), small companies (with a turnover above €1 million and up to €10 million) and micro companies (with a turnover up to €1 million) (Table 18).

Table 18 - Macerata-Fermo footwear companies' respondents by company size

	All district companies	Medium-Large (Turnover >10 Mil €)	Small (Turnover 1 - 10 Mil €)	Micro (Turnover < 1 Mil €)
N. footwear companies	723	50	261	412
Number of questionnaires	87	11	43	33
% of the class	12%	22%	16%	8%
Avg. turnover of respondents	€7.3 million	€43.9 million	€3.2 million	€0.6 million

The survey responses were analysed through two hierarchical cluster analyses to identify clusters of companies facing similar agility drivers and as well as clusters of companies developing similar agile capabilities. These two cluster analyses, taken jointly into account, represented the basis for the case selection.

4.6.3 Case studies selection criteria

The case studies selection criteria are based on a "replication logic" (Yin, 2009), identifying how fashion firms with different agility profiles decide on their supply relationships. In particular, given that three agility profiles have been identified, according to a "theoretical replication" logic at least one case from each agility profile will be selected (Eisenhardt, 1989). Moreover, as these three profiles are expected to have a different probability of developing ASPs, according to a "literal replication" more case studies will be selected as to those agility profiles where ASPs are expected to be more relevant and more likely to be developed.

Based on these considerations six cases have been targeted:

- one case of a company whose agility profile is characterised by a low-turbulence scenario and therefore where ASPs are expected not to be relevant;
- two cases of companies whose agility profile is characterised by a high-turbulence scenario and a weak development of agile capabilities and therefore where ASPs are expected to be relevant but unlikely to be developed;
- three cases of companies whose agility profile is characterised by a high-turbulence scenario and a strong development of agile capabilities and therefore where ASPs are expected to be relevant and likely to be developed.

Given that in field research, where there are "*many qualified case study candidates*" (Yin, 2009, p. 91), the selection of the case studies has to be supported by a structured process. The exploratory survey on agility in the Macerata-Fermo footwear district has been used to identify six candidates with the above described agility profiles.

Among the potential candidates, the companies selected for the case studies are all medium-large firms, because medium-large firms are considered to be the best target for identifying and analysing innovative management practices in district contexts (Lorenzoni and Lipparini, 1999). However, a few smaller companies have been interviewed to analyse the impact of company size on supply partnership decisions and evaluate the external validity of the findings as to SMEs.

4.6.4 Case study protocol definition

The case study protocol, according to the approach suggested by Yin (2009), drives the whole data collection phase. In particular, the case study protocol for this research includes: an initial section on the purpose of case studies, then a section on the data collection procedures (including the data collection plan) and finally the guidelines for the first and second rounds of semi-structured interviews.

The guidelines for semi-structured interviews were discussed and agreed with two footwear experts from the Industrial Associations of Macerata and Fermo. Appendix B reports on the interview guidelines used.

4.7 The case studies data collection and analysis phase

The case studies have been developed based on multiple data sources: interviews, balance sheets, accounting data on their purchases, as well as survey data.

Three rounds of interviews with the entrepreneur and/or the person in charge of managing the procurement process were carried out. The initial interview was used to establish the overall company approach towards supply partnerships, while the second round of interviews was used to enter into the specificities of the supply relationships by supply category. The third interview was targeted to review – and eventually modify and integrate – the initial draft report of the company case. In two cases the review did not take place in person but it was confirmed by mail. In two further cases before the final review an additional meeting was organised so as to have the change to look more in details into the company approach, arriving to a total of four meetings.

Between the first and second rounds, these six companies provided their balance sheets and two of them provided also longitudinal data over eight years[8] (2005-2012) as to their purchase orders in four key shoes components, namely: external leather; internal leather; leather soles; and non-leather soles. These data allowed a quantitative analysis on their actual purchasing strategies, to evaluate how stable their supply partnerships are. For confidentiality reasons the names of the two companies that disclosed their

[8] The definition of the reference duration for analysing the supply relationship life-cycle has followed the approach suggested by Anderson and Jap (2005) who developed their analysis with a five year horizon.

accounting data as well as the names of their suppliers are not reported. These different data sources allow a data triangulation as required to strengthen the internal validity of the case study (Patton, 2002; Yin, 2009).

The first round of interviews with the six selected footwear companies started in October 2012 and the final round of interviews ended in June 2013. The precise timing of the interviews is reported in each individual case study.

The companies and roles of the informants who have been interviewed for building up the six cases of footwear companies are reported in Table 19.

Table 19 – List of medium-large footwear companies interviewed

Company	Role(s)	N. interviews	Total duration
Alfiere	Owner and CEO Procurement Manager	4	177 min.
Formentini	Owner and CEO Operations Manager	2	91 min.
Fabi	Owner and CEO Commercial Manager	2	131 min.
Manas	General Manager	3	129 min.
Paciotti	General Manager	4	134 min.
Nero Giardini	Owner and CEO Marketing Manager	3	162 min.

To strengthen the analysis on supply relationships the research took into account also the supplier's perspective (Heide and Minner, 1992; Liu et al., 2008), complementing the evidence from in-depth case studies on footwear firms with interviews with key suppliers. The supplier's perspective is very important especially in an ASP given that suppliers are required to be highly involved in the focal firms' processes with no guarantee of a long-term supply relationship.

Eight large suppliers in the key supply categories were selected with the support of the Macerata-Fermo Industrial Associations and then interviewed. The interviewed companies are:

- two leather suppliers (one for external and the other for internal);
- two soles suppliers (one for leather and the other for non-leather);
- two footwear stylists
- two shoes assemblers.

The names of the companies and the roles of those interviewed are reported in Table 20.

Table 20 – List of suppliers interviewed

Supplier (supply category)	Role(s)	N. interviews	Total duration
Conceria del Chienti (external leather supplier)	CEO	1	59 min.
Conceria Tirrena (internal leather supplier)	CFO	1	80 min.
Suolificio Del Papa (leather soles supplier)	Owner	1	45 min.
Finproject (non-leather soles supplier)	Commercial Director	1	62 min.
Cesetti (stylist)	Owner	1	58 min.
Pezzola (stylist)	Owner	1	41 min.
Bait (shoes assembler)	Owner	1	43 min.
Exa (shoes assembler)	Owner	1	15 min.

Moreover, given that the footwear companies selected for the in-depth case studies are all among the largest firms of the Macerata-Fermo district, four medium and small footwear companies have been analysed in order to see whether decisions on supply partnerships are influenced by the size of the buying company. The aim of these additional interviews was not to extend the proposed research model (where company size is not taken into account) but just to obtain preliminary evidence on the possibility of extending the findings of the case studies across all firm sizes.

The names of the companies and the roles of those interviewed are reported in Table 21. Brué and Romit are among the smallest of the medium-large companies (with a turnover in 2010 just slightly above €10 mil.) and Lepi and Lillian are among the largest of the small size companies.

Table 21 – List of small-medium footwear companies interviewed

Company	Role(s)	N. interviews	Total duration
Brué	Owner	1	71 min.
Romit	Owner and CEO	1	41 min.
Lepi	Owner	1	31 min.
Lillian	Owner	1	18 min.

Overall 30 interviews with 22 informants from 18 companies were conducted. In all cases, except two, the informant was owner, CEO of the company, eventually supported by another company manager. The interviews lasted on average slightly more than 45 minutes, giving a total of slightly more than 23 hours of interviews.

The interviews were carried out in Italian. They were recorded and transcribed by a professional service provider. The transcriptions in Italian were used for the data analysis. The cases of the six focal companies were drafted in Italian and reviewed with the interviews for validation of the contents and of the coding. Only at this final stage were the results translated into English.

Analysis of the interview data used a coding based on the operationalisation of the key variables of this research, with a more detailed coding moving from the first to the second round of interviews. The coding of the first round of interviews was mainly

based on a broad classification of supply relationships taking into account the variables related to the degree of involvement (namely information sharing, investment sharing, and trust-based governance mechanisms) as well as to the duration (namely length and stability of the supply relationship). The coding of the second round interviews detailed the previous coding by taking into account references to different supply categories. These two rounds of coding provided the evidence for building citations of rich individual case study reports on the selected six large footwear companies. Each individual case study report was enriched with data from the company balance sheet and was reviewed by the informants who validated its content.

Based on the citations related to specific supply categories, five cross-case reports by supply category were developed. These were strengthened through two longitudinal analyses of the detailed data on purchase orders across eight years as well as through reference to the interviews carried out with the eight suppliers.

The data from the interviews were also grouped and analysed by agility profiles, matching them with the evidence collected in the exploratory survey, and developing three cross-case reports by agility profile.

4.8 The conclusion phase

The conclusion phase put together the different evidence from the cross-case reports to describe the achieved contributions to theory and the identified implications for practice, highlighting the limitations of the research as well as the opportunities for further research.

4.9 Quality criteria

As highlighted by Yin (2009) there are four main criteria to be used to assure quality in case study research, namely:

- Constructs validity;
- Internal validity;
- External validity;
- Reliability.

Each of these criteria will be reviewed in this section, also highlighting the limitations deriving from the approach used as well as the interventions made in order to cope with such limitations.

4.9.1 Constructs validity

Constructs validity refers to "*the quality of the conceptualization or operationalization of the relevant concept*" (Gibbert *et al.*, 2008, p. 1466).

The use of multiple sources of evidence is mentioned (Eisenhardt, 1989; Yin, 2009) as an important reference for strengthening construct validity. This research, while relying mostly on interviews with key informants, has achieved construct validity through the use of additional sources such as detailed longitudinal data on purchasing contracts, financial statements as well as evidence on construct operationalisation from the SLR. Moreover, as suggested by Yin (2009), the draft case studies have been reviewed by the key informants.

In a few cases, the interviews in a given company have been carried out with a single key informant. Such a threat to construct validity has been counterbalanced by the fact that, in all these cases, the key informant was in a top management position – owner, CEO or General Manager – having full visibility of and responsibility for the purchasing process and the supply relationship management. Moreover for each supply category, the buyer view of the focal firm informant has been complemented with a view from the supplier side. At the suppliers, the key informant – except in two cases – was also in a top management position – owner, CEO or General Manager – having full visibility of and responsibility for the sales process and the customer relationship management.

The chain of evidence, from the case study protocol (as reported in Appendix B), the case study database, up to the quotations from the interviews or the references to precise supply contracts, further strengthen the construct validity of the research.

4.9.2 Internal validity

Internal validity (also called logical validity) refers to "*the causal relationships between variables and results. Here, the issue is whether the researcher provides a plausible causal argument, i.e. logical reasoning that is powerful and compelling enough to defend the research conclusions* (Gibbert *et al.*, 2008, p. 1466).

The internal validity has been assured mainly through pattern matching (Yin, 2009), with the expectation that different embedded units of analysis (supply relationships in different supply categories) as well as case studies of firms with different agility profiles will lead to different results. More specifically, the five supply categories selected as embedded units of analysis, as well as the three agility profiles chosen for the case studies' clusterisation, represent different characteristics whose differences are relevant from a theoretical point of view.

Moreover, the fact that all the case studies have been selected from a single context – the Macerata-Fermo footwear district – reduces the need for control variables and strengthens the internal validity of the research, limiting the possibility that any differences in context variables not taken into account might well distort the results.

4.9.3 External validity

External validity (also called generalisability) "*is grounded in the intuitive belief that theories must be shown to account for phenomena not only in the setting in which they are studied, but also in other settings*" (Gibbert *et al.*, 2008, p. 1468).

External validity is, to a certain extent, limited by the fact that all the case studies are taken from a single context and therefore they might be affected by specific contingencies. However, as suggested by Yin (2009), the external validity has been strengthened through analytic generalisation supported by the use of replication logic. In the agility profile, which appears more important for the research model, there are three cases taken into account.

The analytic generalisation, and therefore the possibility of extending the results beyond the boundaries of the companies taken into account, is mainly based on the different

scenarios of uncertainty and change analysed within fast clockspeed industries. These are the elements that are influencing the possibility of generalising the research findings.

The fact that this research is strongly focused on the specificities of fashion trends, in terms of the "*changes in aesthetics through changes in looks, shapes, forms and/or changes in symbolic value expressed through new meaning and language of products*" (Tran, 2010, p. 133), will require further empirical research in industries where technology is the main driver of change. At the same time, elements of 'fashion' (such as those referred to in this research) are more and more characterising many industries, well beyond the fashion industry.

4.9.4 Reliability

Reliability is defined as "*the absence of random error, enabling subsequent researchers to arrive at the same insights if they conduct the study along the same steps again … The key words here are transparency and replication*" (Gibbert *et al.*, 2008, p. 1468).

Given that a case study – differently from an experiment – cannot be redone under the same conditions to obtain the same results, following Yin (2009), reliability is achieved here through transparency of the process so that a different researcher might go through the field materials and derive his/her own conclusions. In the research design phase, a case study protocol was developed to define the way the case studies were to be developed and, in particular, semi-structured interviews should have been carried out. Moreover, in the data collection phase a case study database has been developed, in terms of interviews and quantitative data as well as in terms of a draft case study for each company.

5 RESEARCH CONTEXT: EVIDENCE FROM AN EXPLORATORY SURVEY

5.1 Introduction

The context in which the field research is taking place is the Macerata-Fermo district, the largest footwear district in Italy. It is a district located in the Marche region, in the centre of Italy on the Adriatic coast, across the two provinces of Macerata and Fermo. In 2010 it included more than 2,500 companies involved in different roles in the footwear supply chain (33% of the Italian companies active in the footwear industry) with almost 24,000 employees (28% of the overall employment in this industry in Italy) (CIAA Fermo, 2012). One third of these companies are footwear companies developing and presenting their own collections, while the rest are components and accessories manufacturers or subcontractors.

The case studies analysis has been prepared and framed by an exploratory survey on the agility drivers and agile capabilities in the Macerata-Fermo district. The results of the survey are presented below. Based on these results, in the following sections two cluster analyses have been carried out to identify footwear companies facing similar agility drivers and developing similar agile capabilities. The chapter ends with the use of the exploratory survey data for the case study selection.

5.2 Overview of the survey and its results

The survey on agility drivers and agile capabilities was validly answered by 87 companies representing 12% of the targeted population[9]. The medium-large companies responded to the questionnaire proportionally more than the small and micro firms.

The main evidence from the survey is reported in Table 22, with the results divided by company turnover, and considering three categories: medium-large companies (with a turnover above €10 million), small companies (with a turnover above €1 million and up to €10 million) and micro companies (with a turnover up to €1 million). These results

[9] Seven questionnaires did not report any evaluation on the timing of the leather purchases and the production order launches (six of them being small companies and one being a micro company). These questionnaires have been excluded from all the analyses related to agile capabilities.

are simple averages, not weighted based on the turnover, in order not to represent almost exclusively the perspective of medium-large companies, as 13% of the respondents account for 75% of the turnover.

Table 22 - Average values of agility drivers and agile capabilities

	All district companies	Medium-Large	Small	Micro
Number of footwear companies	723	50	261	412
Number of questionnaires	87	11	43	33
% of the class	12%	22%	16%	8%
Agility drivers (average values)				
Collection renewal	68%	77%	70%	63%
Replenishment orders	8%	9%	6%	10%
"Non-traditional" collections turnover *	0.6%	1.6%	0.7%	0.2%
Agile capabilities (average values)				
Prototypes & samples in the district **	99%	90%	100%	100%
Cutting & sewing in the district **	91%	61%	92%	100%
Shoes assembling in the district **	97%	79%	99%	100%
Leather purchased after the fashion fairs	83%	66%	86%	86%
Production launched after the fashion fairs	93%	83%	93%	97%

* Differences between means are 95% significant
** Differences between means are 99% significant

As to the agility drivers, from the survey it appears that the collection portfolio renewal is by far the most important agility driver, while the "non-traditional" collections are almost irrelevant.

The collection renewal, on average, involves 68% of the items presented in the fashion collections, with 26% of the responding companies renewing all the articles in their collection every season.

The replenishment orders are, on average, a quite limited agility driver: most of the order portfolio is acquired at the fashion fairs or during the following selling season.

However, the replenishment represents, on average, 8% of the company order portfolio, with a few of them having replenishment orders which add up to 50% of the overall seasonal orders.

The non-traditional collections do not appear as a relevant agility driver. They account, on average, for 0.8% of the company turnover. Just 16% of the responding companies report the presence of additional collections either as “bridging” collections (i.e. the cruise collection for Thanksgiving in the American market) or as collection refreshments; also for them the “non-traditional” collection represents, on average, 3.7% of their turnover.

As to agile capabilities, both a local supply network and the postponement of purchase orders are widely adopted to strengthen agility.

The location of most of the activities within the district highlights how much their physical proximity is considered to be important for supporting agility. The responding footwear companies, on average, have 99% of the prototyping and samples production made in the district as well as 97% of the final assembly. Also, the vast majority of the cutting and sewing activities (91%) is carried out within the district. This means that supply chain agility is very much supported by a district-based supply chain.

The timing of leather purchases and of production orders launch highlights that these footwear companies rely on the agility of the supply network: on average, 83% of the external leather is purchased after the fashion fairs and 93% of the production orders is launched after the fashion fairs. The fact that most of the activity is carried out after the fashion fairs implies very tight schedules with a strong reliance on the agility of the supply network.

It appears that there are no major differences in the agility drivers and agile capabilities by firm size, with the only exception being the offshoring decisions and – to a more limited extent – the relevance of “non-traditional” collections. It appears that medium-large companies are, on average, managing more internationally oriented supply chains, while the small and micro companies are strongly rooted in the district, probably because they lack the resources and capability to offshore. Similarly, it appears that

mainly the medium-large companies can afford the investment and the risk required for launching additional collections.

5.3 Cluster analysis by agility drivers

The relevance of the different agility drivers for the Macerata-Fermo footwear companies is analysed through a hierarchical cluster analysis procedure. Based on the similarities highlighted by a dendogram (see Appendix C 1), a solution with four different clusters has been selected.

The four clusters have been interpreted as follows:

- Cluster A (43% of the respondents) is represented by footwear companies whose agile strategy is strongly driven by a very high collection renewal rate: on average these companies renew 97% of their seasonal collection. These companies freeze their order portfolio during the selling campaign immediately after the fashion fairs and, for them, the replenishment orders account, on average, for 4% of their overall seasonal orders.

- Cluster B (26% of the respondents) is represented by footwear companies that are developing a less agile strategy, renewing their seasonal collection to a lower extent than the companies in cluster A (on average 70%). These companies are not targeting replenishment orders that represent, on average, 4% of their overall orders portfolio.

- Cluster C (11% of the respondents) is represented by footwear companies whose agile strategy is mainly driven by responsiveness to the replenishment orders received during the fashion season. The replenishment orders – mainly replenishment of the best sellers of the season – account, on average, for 32% of their overall seasonal orders. The renewal rate has a limited relevance as an agility driver: the footwear companies in this cluster renew, on average, 48% of their seasonal collection (from a minimum of 30% up to a maximum of 70%).

- Cluster D (20% of the respondents) is represented by footwear companies that are not facing any agility driver and that are not likely to follow an agile strategy. These companies renew, on average, only 16% of their collection and freeze most of their

order portfolio at the end of the selling season, with replenishment orders adding up to just 5%.

The average values of agility drivers and agile capabilities of each of these clusters are reported in Table 23.

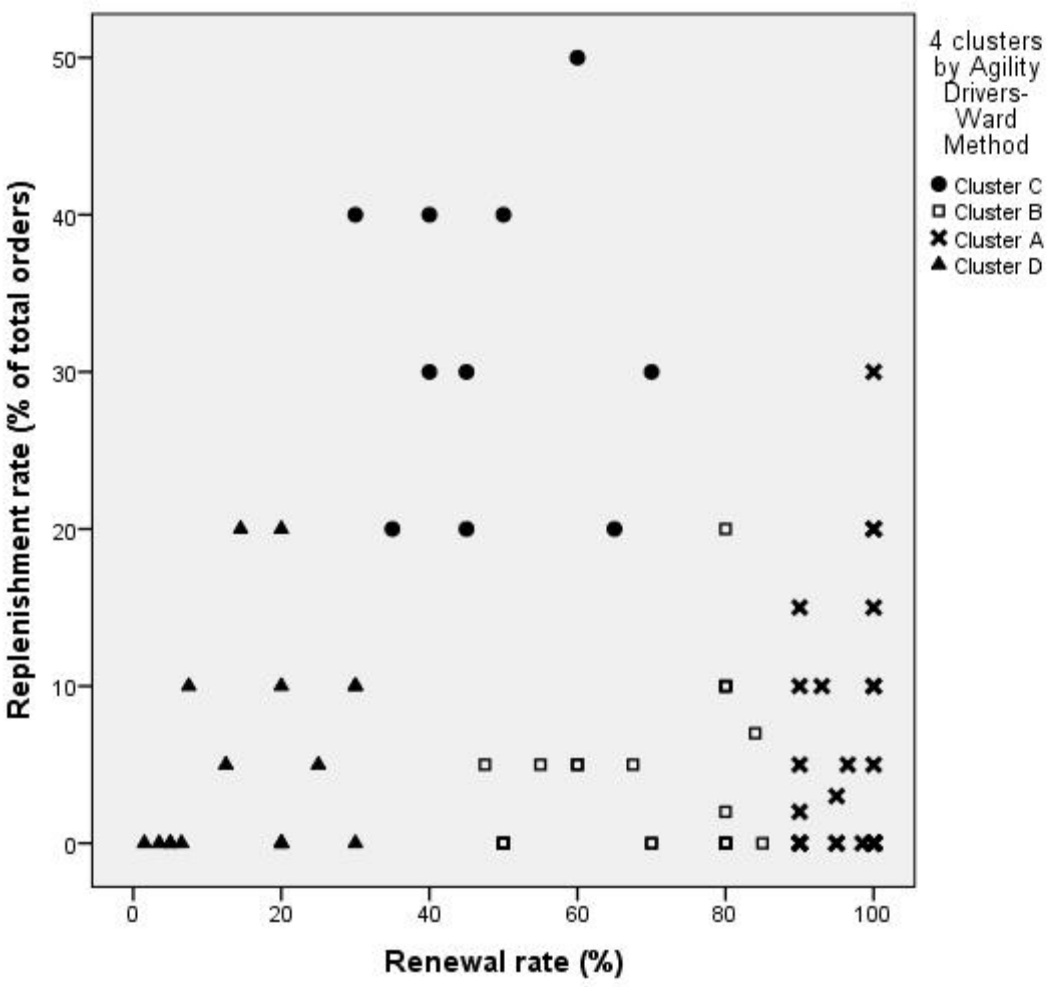
Table 23 - Average values of agility drivers and agile capabilities by agility drivers cluster

	Cluster A High renewal Low replenish.	Cluster B Me-Hi renewal Low replenish.	Cluster C Me-Lo renewal High replenish.	Cluster D Low renewal Low replenish.
Number of respondents	37	23	10	17
% of total respondents	43%	26%	11%	20%
Agility drivers (avg cluster values)				
Collection renewal **	97%	70%	48%	16%
Replenishment orders **	4%	4%	32%	5%
"Non-traditional" collections turnover	0.5%	0.9%	0.8%	0.4%
Agile capabilities (avg cluster values)				
Prototypes & samples in the district	99%	100%	100%	96%
Cutting & sewing in the district	92%	86%	93%	93%
Shoes assembling in the district	98%	94%	100%	96%
Leather purchased after fashion fairs	83%	84%	76%	85%
Production launched after fashion fairs	97%	90%	84%	95%

** Differences between means are 99% significant

The distribution of district companies in the different clusters has been represented through a scatter plot based on the two main agility drivers: collection renewal rate and replenishment order rate (Figure 12).

Figure 12 - Scatter plot of the four clusters by agility drivers



The analysis of these clusters by company size (Table 24) highlights the strong relevance of the renewal rate as an agility driver for the medium-large companies: 55% of the medium-large companies are part of cluster A, renewing, on average, 94% of their collection every season. On the other side, given the significant investments required for renewing the fashion collection every season, 27% of the micro companies are renewing their collection only to a limited degree.

Table 24 - Distribution of district companies among the four agility drivers' clusters

	All district companies	Medium-Large	Small	Micro
Cluster A High on renewal & low on replenishment	37 (43%)	6 (55%)	19 (44%)	12 (36%)
Cluster B Me-Hi on renewal & low on replenishment	23 (26%)	3 (27%)	11 (26%)	9 (27%)
Cluster C Me-Lo on renewal & high on replenishment	10 (11%)	1 (9%)	6 (14%)	3 (9%)
Cluster D Low on renewal & low on replenishment	17 (20%)	1 (9%)	7 (16%)	9 (27%)
Total	87 (100%)	11 (100%)	43 (100%)	33 (100%)

5.4 Cluster analysis by agile capabilities

The relevance of the different agile capabilities for the Macerata-Fermo footwear companies is analysed through a hierarchical cluster analysis procedure[10]. Based on the similarities highlighted by a dendogram (see Appendix C 2), a solution with four different clusters has been selected.

The four clusters have been interpreted as follows:

- Cluster I (60% of the respondents) is represented by footwear companies whose agile strategy is strongly based on postponing their leather purchasing and production orders launch until after the fashion fairs, as well as on maintaining a district-based supply chain. On average these companies purchase less than 1% of their leather requirements and launch less than 1% of their production orders. Moreover, they carry out in the district 100% of the different phases of production. Companies belonging to this cluster have developed strong agile capabilities and are here classified as having agility as their strategic priority.

- Cluster II (23% of the respondents) is represented by footwear companies whose agile strategy is similar to the one followed by companies in cluster I. However,

[10] Due to some missing values, this cluster analysis was carried out on only 80 questionnaires (out of the total of 87).

these acquire a significant share of their leather requirements before the fashion fairs (on average 44%). This approach might not harm the company agility, as long as these companies focus their leather purchases on the type of leather they are able to use across different models of their collection. Companies belonging to this cluster have developed quite strong agile capabilities and are here classified as having agility as their strategic priority

- Cluster III (6% of the respondents) is represented by footwear companies that either are less agile or do not ground their agility on postponement. These companies anticipate, with respect to the fashion fairs, most of their leather purchases (79%) and their production orders launches (77%), so as to ensure better commercial conditions and be able to plan the collection production with a less tight schedule. Such an approach allows them to plan in advance the cutting and sewing activities, which to a significant extent (33%) are carried out outside the district. Companies belonging to this cluster have not developed strong agile capabilities and therefore are here classified as not having agility as their strategic priority.

- Cluster IV (11% of the respondents) is represented by footwear companies that are either less agile or do not ground their agility on a district-based supply chain. These companies are offshoring a significant part of their production activities. Such an offshoring approach is especially relevant for the cutting and sewing activities that, for 64% of the production volumes, are carried out outside of the district. It is also relevant in the case of the final assembly, where 31% of the volumes are, on average, offshored. It is also significant in the case of prototyping and sample production where, in spite of the relevant need for face-to-face communication and responsiveness, 13% of the volumes are offshored. Companies belonging to this cluster have not developed strong agile capabilities and are here classified as not having agility as their strategic priority. The high volumes of activities offshored seems to suggest that cost reduction for them is more important than agility.

The average values of agility drivers and agile capabilities of each of these clusters are reported in Table 25.

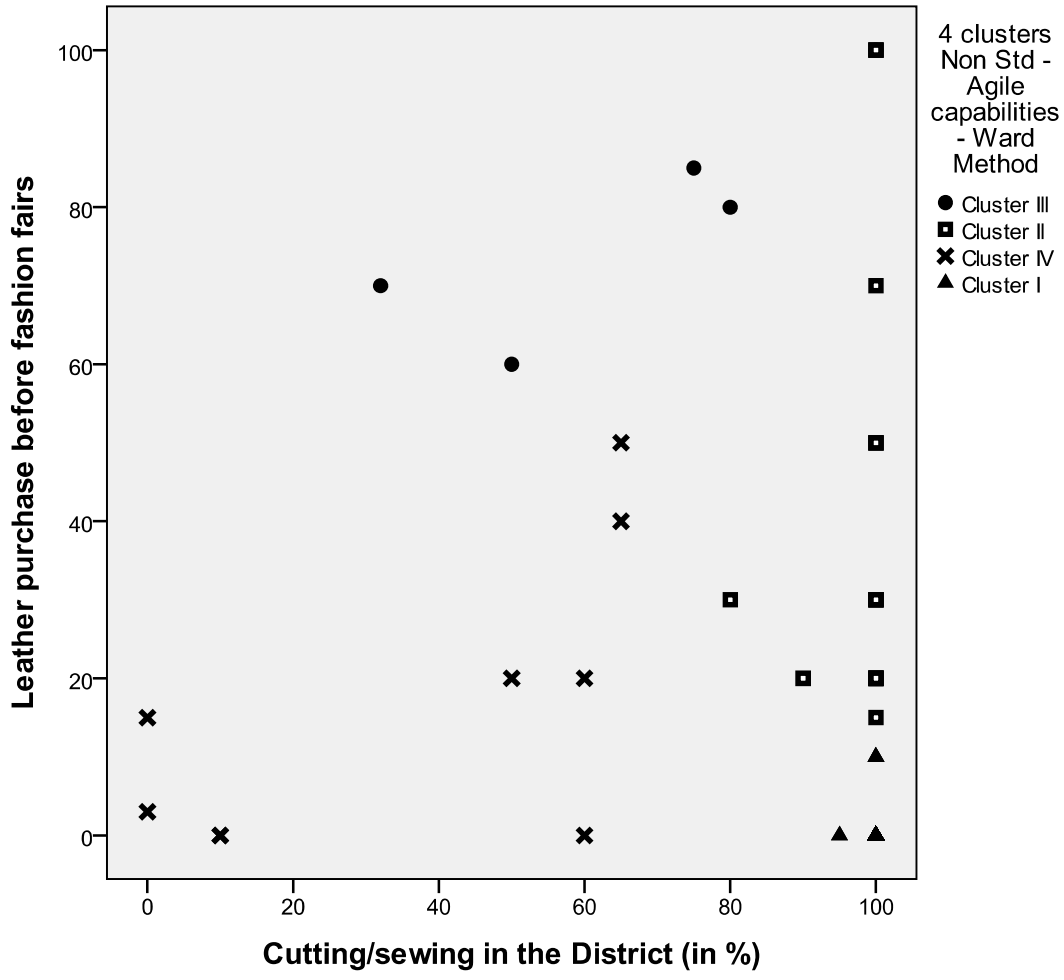
Table 25 - Average values of agility drivers and agile capabilities by agile capabilities cluster

	Cluster I Postponed leather & prod. District based	Cluster II Postponed leather District based	Cluster III Anticipated leather & prod. Offshore cutting & sewing	Cluster IV Postponed leather & prod. Offshore based
Number of respondents	48	18	5	9
% of total respondents	60%	23%	6%	11%
Agility drivers (avg. cluster values)				
Collection renewal	69%	66%	56%	72%
Replenishment orders	7%	9%	10%	5%
"Non-traditional" collections turnover	0.3%	0.9%	1.4%	1.1%
Agile capabilities (avg. cluster values)				
Prototypes & samples in the district **	100%	100%	100%	87%
Cutting & sewing in the district **	100%	98%	67%	36%
Shoes assembling in the district **	100%	100%	100%	69%
Leather purchased after fashion fairs **	99%	56%	21%	84%
Production launched after fashion fairs **	100%	93%	23%	98%

** Differences between means are 99% significant

The presence of the district companies in the different clusters has been represented through a scatter plot based on the two main agility drivers: the degree to which the cutting and sewing activities are carried out in the district and the degree to which the leather purchases are issued before the fashion fairs (Figure 13).

Figure 13 - Scatter plot of the four clusters by agile capabilities



The analysis of these clusters by company size (Table 26) highlights that an agile strategy based a district-based supply network, together with a relevant postponement of purchase orders, is adopted mainly by the micro companies (84% of them) while it is marginal among the medium-large firms (only 9% of them). At the same time, given the significant investments required for anticipating purchases and production orders launch as well for managing an offshore supply chain, only 3% of the micro companies are adopting such an approach, compared with 64% of the medium-large companies.

Table 26 - Distribution of district companies among the four agile capabilities clusters

	All district companies	Medium-Large	Small	Micro
Cluster I Postponed leather & production; district-based	48 (60%)	1 (9%)	20 (54%)	27 (84%)
Cluster II Postponed leather; district based	18 (23%)	3 (27%)	11 (30%)	4 (13%)
Cluster III Anticipated leather & production; offshore cutting & sewing	5 (6%)	2 (18%)	2 (5%)	1 (9%)
Cluster IV Postponed leather & production; offshore based	9 (11%)	5 (46%)	4 (11%)	0 (0%)
Total	80 (100%)	11 (100%)	43 (100%)	33 (100%)

5.5 Support for case selection

The cluster analyses highlight different approaches towards agility and represent the basis for identifying the case for an in-depth analysis of the development of agile supply partnerships.

The cluster analysis by agility drivers can be interpreted as the potential relevance of agile supply partnerships, decreasing from cluster A down to cluster D. A high "collection renewal rate" requires a company to look at the novelties that are offered every fashion season by the suppliers, with a strong need to be open towards new proposals from new suppliers. Such a driver is much weaker with respect to companies that have a limited target for renewal. The emphasis on "replenishment orders" tends to be more related to the response capabilities of the existing supply network, given that the replenishment takes place with respect to the best sellers of the season and only the suppliers already involved can have the responsiveness required. Cluster D, being represented by companies with a low renewal rate and a low replenishment order percentage, is not taken into consideration as its companies do not appear to be developing an agile strategy.

The cluster analysis by agile capabilities can be interpreted as highlighting the likelihood of agile supply partnerships development, decreasing from cluster I down to cluster IV. The delay in commitments regarding leather purchases and the production orders launch allows the company to manage last minute changes in the supply orders in response to unforeseen trends in the fashion market. On the other hand, the more in advance the leather is purchased and production orders launched, the more the company has already made a firm commitment and is therefore reducing its degree of freedom. Similarly, the possibility of relying on a district-based supply chain is expected to reduce the times required for the selection of new suppliers.

Based on these considerations, the research will focus on companies from three different typologies[11] as shown in Table 27:

- Companies where the development of ASPs is expected not to be relevant. It is the area shown in dark grey, which includes 10% of the respondents;
- Companies where the development of ASPs is expected to be relevant but not likely. It is the area shown in medium grey, which includes 14% of the respondents;
- Companies where the development of ASPs is expected to be relevant and likely. It is the area shown in light grey, which includes 56% of the respondents.

Given the case studies are focused on the medium-large companies, Table 28 presents the distribution of the 11 medium-large respondents across the identified company typologies.

Following the selection criteria identified in Chapter 4, the selection will focus on: one company from the group where ASPs are expected not to be relevant; two companies from the group where ASPs are expected to be relevant but unlikely to be developed; and three companies where ASPs are expected to be relevant and likely to be developed.

Within each group, preference is given to the companies with the highest turnover as it is expected that larger companies will have a more structured approach to supply partnerships.

[11] A fourth area is not taken into account, given that it is made up of footwear companies facing low agility drivers, that are not expected to adopt an agile strategy.

Table 27 - Distribution of the respondents across different clusters

Clusters based on agility drivers --- Clusters based on agile capabilities	Cluster A High renewal Low replenish.	Cluster B Me-Hi renewal Low replenish.	Cluster C Me-Lo renewal High replenish.	Cluster D Low renewal Low replenish.	Total
Cluster I Postponed leather & production; district-based	**20** **25%**	**13** **16%**	**4** **5%**	11 14%	48 60%
Cluster II Postponed leather; district based	**8** **10%**	**4** **5%**	**3** **4%**	3 4%	18 23%
Cluster III Anticipated leather & production; offshore cutting	**1** **1%**	**2** **3%**	**1** **1%**	1 1%	5 6%
Cluster IV Postponed leather & production; offshore based	**4** **5%**	**4** **5%**	**0** **0%**	1 1%	9 11%
Total	33 41%	23 29%	8 10%	16 20%	80 100%

Table 28 - Distribution of the medium-large companies across different clusters

Clusters based on agility drivers --- Clusters based on agile capabilities	Cluster A High renewal Low replenish.	Cluster B Me-Hi renewal Low replenish.	Cluster C Me-Lo renewal High replenish.	Cluster D Low renewal Low replenish.	Total
Cluster I Postponed leather & production; district-based	**V. Virgili**				1
Cluster II Postponed leather; district based	**Fabi** **Manas** **C. Paciotti**	**Brué**			4
Cluster III Anticipated leather & production; offshore cutting			**Bag**		1
Cluster IV Postponed leather & production; offshore based	**Ciao Bimbi** **Formentini** **Romit**	**Alfiere**		Melania	5
Total	7	2	1	1	11

Key:

	Companies where ASPs are expected not to be relevant
	Companies were ASPs are expected to be relevant but not likely
	Companies where ASPs are expected to be relevant and likely
	Companies that are out of the scope of the case study analysis

Based on the selection criteria defined as part of the research methodology and based on the evidence from the preliminary survey, the following six companies are selected for the in-depth case studies:

- Nero Giardini as a company where ASPs are expected not to be relevant;
- Alfiere and Formentini as two companies where ASPs are expected to be relevant but not likely to be developed;
- Fabi, Manas and Paciotti[12], as three companies where ASPs are expected to be relevant and likely to be developed.

In the following chapter each of these companies is described in respect of their approach to supply relationships.

[12] Paciotti is analysed only as to its premium line "Cesare Paciotti".

6 EVIDENCE ON SUPPLY RELATIONSHIPS IN THE MACERATA-FERMO FOOTWEAR DISTRICT (WITHIN-CASE ANALYSIS)

6.1 Introduction

This chapter reports on the evidence on the approach to supply partnerships, as developed by six medium-large footwear companies of the Macerata-Fermo district.

From the exploratory survey presented in Chapter 5, three different clusters of companies were identified and the six cases have been selected so as to represent all these clusters. Specifically the companies selected are:

- Nero Giardini, as a company where agile supply partnerships (ASPs) are expected not to be relevant;
- Alfiere and Formentini as two companies where ASPs are expected to be relevant but not likely to be developed;
- Cesare Paciotti[13], Fabi and Manas as three companies where ASPs are expected to be relevant and likely to be developed.

Each of these companies is briefly described with respect to the agility profile reported in the exploratory survey and then analysed regarding its approach to supply relationships in general, and with specific reference to the identified five key supply categories. As already presented in Chapter 4, the analysis by supply category will be carried out with respect to the key product/service required for manufacturing a pair of shoes: leather (external and internal), soles (leather and non-leather), style services and shoes final assembling.

The approach towards supply partnerships has been also analysed with respect to four small-medium footwear companies from the Macerata-Fermo district to verify how much such approach is influenced by firm size.

At the end of the chapter, two of the above mentioned medium-large companies are analysed with respect to the purchase orders they issued over eight years (2005-2012)

[13] Cesare Paciotti is analysed only as to its premium line “Cesare Paciotti”.

for four key shoes components: external leather; internal leather; leather and non-leather soles. Such longitudinal analysis is aimed at strengthening the evidence from the interviews with quantitative data to evaluate the supply partnerships' stability over the years. For confidentiality reasons, the names of the companies involved in the longitudinal analysis, as well as the names of the suppliers are not reported.

6.2 Nero Giardini

Nero Giardini is a leading Italian footwear company focused on a fashionable shoes collection to be comfortably worn every day with a competitive price/quality ratio.

This company's approach to agility is focused on the collection development to a more limited extent than most Macerta-Fermo footwear companies. Nero Giardini offers a quite limited collection portfolio (350 articles) renewed much less frequently than the district average (on average the new articles in its fashion collection are 40%). Differently from the approach followed by most district companies, the company has the goal to industrialise fashion articles and produce them on quite a large scale (on average almost 10,000 pairs per article/per season) to be able to launch fashion collections with a very competitive price/quality ratio.

The Nero Giardini approach to agility is mainly focused on the planning and production phase, especially as far as replenishments are concerned. In particular, the company takes great care in the planning related to the sales period at the end of the fashion season, given that there are customers who only buy during this period. Towards the end of the fashion season, immediately before the sales period, Nero Giardini always replenishes the shops with the full range of its best-selling items, with an agility approach similar to lean retailing (Table 29).

According to such an agile strategy, Nero Giardini does not need the agile capabilities related to postponed planning: the company issues most of its leather order and the production orders before the fashion fairs. Being in advance with respect to the "normal" district timing, Nero Giardini can negotiate with suppliers better terms both for price and delivery date. At the same time, the company does not order all of the leather at the end of the sales campaign, but leaves room for the fast replenishment of the models/colours that are the best sellers during the fashion season. Such an approach

to sourcing and production planning contributes to Nero Gardini's competitiveness at the point of sale, both in terms of costs and product availability.

Similarly, Nero Giardini needs a local supply network in the prototyping and in the final assembly phases, mainly for non-agility related issues (the "Made in Italy" design quality) while the company can perform outside the District most of the less value-adding production activities (mainly leather cutting and sewing).

Table 29 - Profile of Nero Giardini

Turnover (in mil. euro)	213.2
Collection renewal rate (% of new articles in collection)	40%
Re-orders after the traditional selling campaign (in %)	30%
Turnover from non-traditional collections (in %)	0%
Samples produced in the District (in %)	100%
Cutting & sewing carried out in the District (in %)	32%
Final assembling carried out in the District (in %)	100%
Leather purchased before the fashion fairs (in %)	70%
Production orders issued before the fashion fairs (in %)	75%

Source: Exploratory survey on "Agility drivers and agile capabilities in the Macerata-Fermo Footwear District", Spring 2011 (Data referring to 2010)

Nero Giardini reports a strong positive approach towards supply partnerships, as highlighted by the interviews with the CEO and the Marketing Manager[14]. Besides the important contribution of the supply network to the collection development – as is widely recognised in the fashion industry – Nero Giardini relies very much on its suppliers in order to implement its production and distribution model based on an initial production which is based on forecasts and then a significant replenishment of the season's best-selling items. "*We can provide our customers with the replenishment service, only if the whole supply chain is supporting us. Our suppliers need to be aware*

[14] All the quotes for Nero Giardini are taken from two interviews that were carried out with the CEO and the Marketing Manager on October 10th 2012 and on February 27th 2013. The evidence from these interviews was reviewed with them on June 4th 2013.

of and support our philosophy. They are able to provide us with the responsiveness we require only if they keep in stock materials and components dedicated to us. This is particularly true for the external leather supplies".

The relationships established by Nero Giardini with its key suppliers, include all the three elements characterising a supply partnership: information sharing, investment sharing and trust-based governance mechanisms.

Information sharing with the suppliers is considered to be very important both in the development stage and in the production/delivery phase. "*We have our style office where our stylists are looking at the new market trends and are developing the new collection. However, to be innovative and competitive, we need proactive suppliers both as to style and to technical competences on issues such as lightness and robustness. We need their component know-how. We tell them what we need in terms of final look and then these suppliers involve their research department to present us with solutions*". Information sharing related to the production schedule is considered fundamental, especially for the replenishments along the season. "*We have extended our IT system to our supplier. We are passing them the orders and we need to get their planning schedule to see whether it fits our needs or otherwise we go and discuss it*". Whenever these information sharing mechanisms do not work properly there is a negative impact on the company responsiveness. "*Just yesterday we sent a replenishment order for external leather which is likely to delay many of the deliveries to our customers. There has been a lack of relationship, a lack of information, as nobody here in the company knew that this tannery starts from fur and therefore needs an additional 15 days in the preparation of the finished leather*". Had the tannery been informed to keep some stock at least at the 'crust' stage, it would have been able to deliver the finished leather in one week. As a result, without such information the tannery (and therefore Nero Giardini) is going to be late in satisfying the retailers' orders on time.

As to investment sharing, Nero Giardini is very active in supporting its supply network even with significant investments, e.g. the company owns a few factories that are rented out on a long-term basis to some of its assemblers. Moreover, the company shares its IT systems with all the assemblers and, as is the habit in the footwear business, covers the

investments in moulds that non-leather sole producers are making to manufacture Nero Giardini customised soles.

As to governance mechanisms, the informal relationships are very important. The CEO, in taking the final decision on every major supplier, always considers the human aspects of the relationship. "*I want to see the person, I want to see how he speaks, whether there is a feeling*", as he considers that these elements will have a remarkable impact on the way the two companies can do business in the future. Even if formal contracts are signed, the solution to any problem that might occur is first faced based on informal arrangements. However, there are also semi-formal requirements such as keeping in stock, for replenishment during the season, at least 10% of the quantities that have been required in the initial season production planning. Such a requirement applies mainly to the tanneries – which are asked for a one week delivery – and to the soles suppliers – which are asked for a three day replenishment lead-time.

Nero Giardini is one of the largest companies in the Macerata-Fermo district and, in order to be able to source all the components and the processing required for its production, often splits the production volumes of its best-selling articles between two (or more) different suppliers. Given that its suppliers are often involved in producing several articles, the company is able to balance the supply orders among its suppliers providing most of them with a reasonable workload guarantee. Moreover, the fact that the collection proposed by the company is renewed to a limited extent (40% renewal rate) further facilitates the planning of the components' requirements and the order allocation to suppliers. Both these elements support the company in building up stable partnerships.

Given the general company attitude towards the development of stable and long-term supply partnerships, there are relevant differences in the way different supply categories are managed.

As to the external leather, Nero Giardini is developing many long-term partnerships based upon recurring short-term contracts. Establishing supply partnerships with external leather suppliers is a priority for the company in order to obtain a good quality/cost ratio and a high responsiveness. The company relies on four major suppliers that cover most of its requirements. Each of these tanneries specialises in a certain

leather type and every season Nero Giardini is sourcing from its suppliers a different amount of leather, based on the kind of leather that market trends require. However, while the overall amount might vary, within each leather type, the more established tanneries maintain a high share of the purchase orders season after season. Nero Giardini is able to build up strong partnerships with its leather suppliers also because the company renews its seasonal collection fewer times than the average district company. Therefore it can offer the tanneries much stronger guarantees that it will reorder from them at least part of the previous year's collection as well as it is able to place in advance, with respect to the fashion fair, most of the leather orders (especially those for the carried-over items), allowing the tanneries to spread their overall production activities throughout the year.

Establishing partnerships with internal leather suppliers is not considered important, given that this material is quite standard, produced in a few colours that are mainly repeated season after season. The company is sourcing internal leather from just a few suppliers in order to increase its bargaining power. However, the chosen suppliers can vary from season to season. Moreover, given the very limited risk of obsolescence, Nero Giardini might decide to buy several million feet of internal leather irrespective of the present needs and stock them for future use.

Nero Giardini, up to a few years ago, had a very strong partnership with a single non-leather sole supplier, given that almost all its non-leather soles were made of a single material, TR - Thermoplastic elastomer. In the past five years Nero Giardini has widened its collection offer to shoes having rubber and polyurethane soles, and therefore it has faced the need for new soles suppliers specialising in these materials. Now the company is relying on three major suppliers, each of them specialised in a specific type of sole and with each of them the company has developed a stable partnership approach. The development of these partnerships has faced some troubles, given that the non-leather sole producers are in general quite large companies – compared to the average size of the shoes makers – and they tend to be quite inflexible in their production scheduling. Nero Giardini has selected the suppliers and developed partnerships only with those soles manufacturers that were willing and able to change

their production planning to fit the very short delivery lead-time required by the company for its replenishment orders[15].

The relationship with the external stylists is based on high-involvement and targets a long-term horizon. "*We have always had an 'institutional' stylist. We had been working with a previous stylist for 18 years. Now, with the present stylist, we have been working for 8 years*". Such a long-term relationship is considered important to give stability to the brand and to its positioning. Besides the main stylist, Nero Giardini has always had additional stylists with a supporting role for a few models every season. "*Such stylists are targeted to bring more ideas, something new, something fresh*". However, these relationships also last for a long time, on average around six-seven years.

Establishing a long-term relationship with subcontractors – any subcontractor, not only the final assembler – is considered very important, given their impact on costs and the delivery performance of the company. Nero Giardini has offered its subcontractors great opportunities to follow its own growth path, in some cases also renting them a factory into which they could move. In most of the years Nero Giardini has been able to fully saturate the production capacity of its existing suppliers – even prompting the selection of new subcontractors. Moreover, the fact that Nero Giardini is able to plan the production of the carried-over models in advance, with respect to the fashion fair, allows its subcontractors to start their production activities early and therefore better balance their overall workload. Some of the subcontractors, leveraging on the safety net of such a long-term partnership, have followed Nero Giardini in its very relevant trend growth. However, a few of them, while remaining long-term stable partners, have decided to limit their growth, either because they want to limit the risks and efforts of growth or because they had to face space or competences boundaries. "*I have offered them a chance, but some of these entrepreneurs regarded it as mad to face the challenges of moving from a craftsmanship to an industrial organisation! Others simply had no space for growing their activities or were lacking the required process capabilities to take on additional jobs*".

[15] Shoes with leather soles represent just a fraction of the Nero Giardini business and therefore they are not considered by the company to be a key supply category.

In almost any supply category Nero Giardini is targeting mainly long-term partnerships with a progressive path into, and out of, the vendor list. The acceptance into the established vendor list requires at least two seasons of testing. During these initial seasons the new supplier is involved only with a few models. If the supplier performs well, it is progressively involved in a growing number of items, with a growing order volume. In a similar way, also the dismissal from the vendor list takes time. At first Nero Giardini analyses together with the company the reasons for the underperformance and tries to solve the problem. If the problems are very significant and cannot be solved, the supplier is progressively limited in the number of items in which it is involved. For instance, in case of sole suppliers, the underperforming supplier will keep on producing the old models with the existing moulds but will not be involved in any new model. Such a smooth path into and out of the vendor list is consider crucial in order not to put at a risk the regularity of the overall production flow Nero Gardini is expected to provide to retailers. The company believes it is not easy or safe to suddenly change suppliers. "*If we change continuously it is difficult to establish collaboration. The supplier needs to know how we think, how we are organised, how we are structured. Having a stable partnership is very different from having spot suppliers: one supplier for one season and another one for another. This would be deleterious as it doesn't allow you to give a warranty to the consumer in terms of quality and availability and today brand is synonymous with warranty*".

6.3 Alfiere

Alfiere is a footwear company that, since its establishment in 1988, has been focusing on the commercialisation of economic shoes produced abroad. The company collection is marketed under the brand Khriò. Alfiere offshores most of its production to Eastern Europe (mainly Romania) but over the past five years, has relied more and more on supplies from India. In the past the company also used to have Northern Africa and Portugal as manufacturing bases for part of its production but then it decided to focus just on the two countries – Romania and India – where it can have a critical mass.

Alfiere's approach to agility has to deal with the decision to offshore all its production activities, with the only exception being its prototypes and samples. The company needs therefore to manage the turbulence characterising the fashion industry without being

able to rely on a local supply base. In spite of these challenges, Alfiere manages its sourcing and planning activities, postponing the bulk of them until after the end of the sales campaign (Table 30). Romanian suppliers are able to provide a response time not much longer than district companies, while Indian suppliers – whose lead-time is longer – are assigned mainly carried-over articles so that they can start their sourcing and production activities early.

Table 30 - Profile of Alfiere

Turnover (in mil. euro)	26.3
Collection renewal rate (% of new articles in collection)	68%
Re-orders after the traditional selling campaign (in %)	5%
Turnover from non-traditional collections (in %)	0%
Samples produced in the District (in %)	100%
Cutting & sewing carried out in the District (in %)	0%
Final assembling carried out in the District (in %)	0%
Leather purchased before the fashion fairs (in %)	15%
Production orders issued before the fashion fairs (in %)	0%

Source: Exploratory survey on "Agility drivers and agile capabilities in the Macerata-Fermo Footwear District", Spring 2011 (Data referring to 2010)

Alfiere reports a generally positive approach towards supply partnerships, as highlighted by the interview with the company CEO, given that they almost never buy a component off-the-shelf but ask for customisation and involve the suppliers in the prototyping phase. All the three elements of information sharing, investment sharing and trust-based governance mechanisms can be found in the partnership approach the company is developing with its suppliers. Alfiere highlights that, besides the operational issues, some of its partnerships are based mainly on the need for confidentiality.

Information sharing with the suppliers is considered to be very important[16]. "*There are some 'privileged supply relationships' that are based on privacy, given the characteristics of the fashion industry and are key to our design and style*". Moreover, given that the whole supply chain in the fashion industry is subject to fast changes within a very strict time horizon, every player needs to share information with its suppliers and customers on the collection production progress.

The company is inclined towards sharing investment with its suppliers, in particular with the finished product subcontractors, in three major areas: the reorganisation of the factory floor, the purchase of specialised equipment and the development of the information system. Considering that Alfiere has offshored its production to Romania and India, the company always invests in improving the organisation of its suppliers to increase their productivity as well as to increase their production process up to Alfiere's standards. In some cases, where the supplier needs special equipment but lacks the financial strength to invest, Alfiere buys the equipment and then rents it to the suppliers at an agreed monthly rate. Finally, Alfiere supports the subcontractors in their adoption of the company web portal as an interface through which to receive information.

As to the governance mechanisms, the supply relationships are mostly based on informality. "*I believe that 'areas of informality' are required to keep the company in a safe position. There is in any case complexity in the production process that makes it difficult to have everything under control in a formal manner. We would run the risk of 'stiffening'. We need to rely on too many suppliers that are working without fully respecting the timetable we presented to them at the beginning of the fashion season planning. If we are not flexible and if our suppliers are not flexible, the whole collection development process would not be manageable*". There is a need to readjust and fine-tune the production and delivery plans several times during the fashion season, making rigid contracts unsuitable. "*Even if there were penalties specified, such penalties would be very difficult to apply, given that the underperformance of a supplier is often linked to the fact he was not in a position to start or to work according to the schedule because*

[16] All the quotes for Alfiere are taken from three interviews that were carried out with the CEO on October 10th 2012, February 13th 2013 and March 21st 2013. The evidence from these interviews was reviewed with the CEO and the Purchasing Manager on May 30th 2013.

of delays or bottlenecks outside his control". For such reasons, in the daily work, mutual trust is considered to be more effective than any formal contractual clause.

Alfiere is building many supply relationships on short-term contracts renewed season after season, e.g. recurring short-term partnerships. There is, however, a contrast between the way the company is presently working (in particular the way it is managing a wide portfolio of external leather suppliers) and the changes in the sourcing strategies the company is putting in place. The aim is to develop a smaller number of more stable partnerships for those components that are more subject to fashion trends, going against a mainstream approach that, in those categories, targets more fragmentation and change in the supply base.

Establishing a few strong partnerships with external leather suppliers used to be the sourcing strategy adopted by the company. In the last 3-4 years however, the search for widening the fashion collection as well the changing market trends has brought a fragmentation of the supply base and a quite significant turnover in the actual suppliers. "W*e try to build quite stable relationships with the tanneries, but every season our actual sourcing decisions vary depending on the type of leather that best suits the collection we are developing and the fashion trends we are targeting. For a few years the market might demand cow leather and then the fashion might move more towards sheep, goat or lamb. … It might happen that one season we work a lot with a given tannery as it has got a good product and a good price. The next season the same leather might not be in fashion any longer and we might have to leave that tannery*". The lack of stable relationships with the tanneries is seen as a weakness imposed by the fashion trends rather than a strength. "*In the present situation tanneries are the weakest link in the supply chain. It would be interesting to develop production programmes jointly we them, but we don't manage to achieve that. We should try and work together on a production process that, through a preliminary processing, might reduce the delivery times from three to two or even one week*". The company is considering the option to build a few stable partnerships investing together with the tannery to develop a postponement strategy where the supplier keeps a semi-finished leather (the crust) that is already tanned but can be finished in different ways so as to provide quite different looks. This would allow both the company and the tanneries to optimise their

production processes. This would allow the reduction of stock and risks while improving external leather availability. "*The tannery, should it start from the crust, could give us the finished product in 4-5 days in contrast to the 2-3 weeks required by a processing that starts from a wet blue leather*.[17]"

The relationship with their internal leather suppliers is quite consolidated but Alfiere is willing to pursue aggressive sourcing strategies related to this supply, given that such material is not very sensitive to fashion trends. The product is quite standard and therefore the company can shop around, also putting into stock several thousand feet of leather, using it on different models, eventually also across different seasons.

The relationship with non-leather soles suppliers is well established, because the company requires soles that are using an established production technology and there is currently no need to look for alternative suppliers. The existing suppliers are considered able to cope with the requirements of the fashion trends. "*If we were to require a product with a higher technological level, such as a sole in EVA or extra-light, we would then look for different suppliers*". The company is indirectly supporting the soles suppliers with the customised moulds that allow Alfiere to have customised soles: "*We normally don't buy the moulds that the sole producers are using but we pay their costs through a depreciation charge we are paying on the overall production, up to a given level of pairs. If we don't reach that given level, we are almost forced to keep on working with a given sole producer or we need to pay him for the moulds*".

The relationship with the external stylists is based on high-involvement and targets a long-term horizon. Alfiere has two stylists: the company has been working with one of them for more than 10 years and with the other for five seasons. The company is offering them yearly contracts but the goal is to confirm these contracts year after year. The company believes that a long-term partnership is the best approach, given that the stylist needs at least a couple of years to synchronise its working methods to the company requirements. In their case, the selection of a new stylist (in parallel with the existing one) was due to the company objective of entering into new segments and also it was decided to give a strong stimulus to the incumbent stylist. In both cases, the

[17] "Wet blue" is the leather from the initial chrome tanning process.

partnership is strengthened by rewarding them also with a percentage of the actual sales of the models they developed.

The relationship with the assemblers of the finished product is based on high-involvement and a long-term time reference. "*We look for stable relationships and we want to guarantee the suppliers a quite stable production order flow over the year. By guaranteeing a quite stable production, we can get more competitive prices as well as a time delivery guarantee. It is not easy to go to a spot supplier and say 'I want a given production amount by x time' as he doesn't know you and he will tend to give priority to his stable customers*". The need for establishing long-term relationships is strengthened by the fact that the company is dealing mainly with Romania and India and therefore it takes time to overcome the physical and cultural distances and arrive at a smooth way of working. This is reflected in the fact that in the past three years Alfiere has been working on the consolidation of its existing suppliers without looking for any alternative. Even more, the company established a 50-50 joint-venture with one of its Indian suppliers for managing part of the sourcing and production processes carried out in India. For the future the company is evaluating the possibility of radically restructuring its supply base in Romania, moving from pure contracting (*conto-lavorazione*) to the purchase of the finished shoes. This pure contracting emphasises labour productivity over overall efficiency (mainly the use of the leather), given that the subcontractor is paid based on the number of shoes produced, while not being penalised for a non-optimal use of the leather. Alfiere considers that the incentives of the two companies are not as fully in line as they would be if the supplier were to buy the leather and all the other components according to the company's specification and, at the end of the production process, sell the finished product. The change from pure contracting to the purchase of finished shoes is likely to favour even more long-term partnerships, given that partner selection will be more difficult and the supplier change more risky.

The production of the samples is considered by Alfiere – as well as by almost all the fashion companies – to be a critical activity. Therefore the samples are partially produced in-house – more precisely in another company owned by the entrepreneur family. However, the in-house capacity is less than the peak requirement and therefore

in the peak period Alfiere needs to use a nearby producer. "*This is a close relationship with a local supplier but unfortunately it is not a 'continuous' relationship, given that Alfiere is not providing this local supplier with a stable workload all year long. In strategic terms we should develop a local supply source that we always feed either with samples production or with a small qualified production to be sold separately*". The strong need for high involvement contrasts with the lack of continuity in the relationship and such an imbalance is perceived by the company as a significant risk factor.

As a general evaluation of the supply partnerships, Alfiere's CEO highlights the importance of targeting high-involvement and long-term partnerships whenever possible. He believes that stable partnerships are possible, even with respect to items and processes that are very much affected by the fashion trends, given that most of the suppliers are somehow following the fashion trends and, with a few exceptions mainly related to external leather, are able to provide the company with proposals that are in line with market requirements. Therefore he believes that a fashion company might be able to stabilise its supplier base to a much greater extent than what is happening currently, with potential advantages in terms of purchase price and productivity linked to larger volumes repeated over time and to fine-tuned, shared procedures.

6.4 Formentini

Formentini is a footwear company focused on women's shoes, offering fashionable shoes at very competitive prices. The company's success relies on its strong relationships with the modern trade (and more recently with strong Internet players).

Formentini offers a wide product portfolio (more than 1,000 different articles per season), almost completely renewed every season (more than 90%). As to its approach to purchasing and planning, Formentini postpones the bulk of its leather purchases (80%) and all its confirmed production orders until the moment it acquires firm orders from its customers (Table 31). To be competitive on prices the company has offshored part of its production in Eastern Europe while maintaining most of the components suppliers within the Macerata-Fermo district. The goal is to reduce costs but preserve a quick response to the challenges and changes characterising the fashion industry.

Table 31 - Profile of Formentini

Turnover (in mil. euro)	29.1
Collection renewal rate (% of new articles in collection)	93%
Re-orders after the traditional selling campaign (in %)	10%
Turnover from non-traditional collections (in %)	5%
Samples produced in the District (in %)	100%
Cutting & sewing carried out in the District (in %)	60%
Final assembling carried out in the District (in %)	70%
Leather purchased before the fashion fairs (in %)	20%
Production orders issued before the fashion fairs (in %)	0%

Source: Exploratory survey on "Agility drivers and agile capabilities in the Macerata-Fermo Footwear District", Spring 2011 (Data referring to 2010)

Formentini's CEO highlights that supply partnerships are a key element of their strategy, given the need for responsiveness that the fashion industry requires. Out of the three elements characterising a supply partnership, Formentini places emphasis on information sharing and informal governance mechanisms, while not sharing investment with its suppliers[18].

Information sharing with their suppliers is considered to be very important for the success of the collection, both regarding contributions to the overall look of the shoes and the achievement of the target cost required by the modern trade. "*For the new 'structures' [the types of shape and sole] we involve all our suppliers. We discuss with them how to have a product industrialised according to the design and at the cost we are targeting. The components' suppliers give very relevant contributions as they have more specific knowledge of their business than we have. We can give them the overall idea. We give them some specifications, we can show them the drawings of a heel or of*

[18] All the quotes for Formentini are taken from two interviews that were carried out with the CEO of the company on October 22nd 2012 and February 13th 2013. The evidence from these interviews was reviewed by the CEO via mail.

a sole and they return to us the technical specifications required so as not to have problems at the production stage".

There is almost no investment sharing with the suppliers as the company does not like this kind of approach. Therefore either they select suppliers able to invest on their own or they fully cover the investments eventually required by the suppliers and keep control of their results. "*We acquire equipment for our suppliers and we give them it as a 'loan for use', retaining the full property of the equipment ourselves. As to the soles, if we give the supplier an idea, such an idea remains ours and we fully pay the cost of the moulds*".

The governance mechanisms are very informal even if all the supply relationships are formalised for administrative reasons. "*Very few elements end up on paper in a true contract. Very few. First we agree on the price and product quality. If you consider the leather, we split a piece of the leather in half, we keep half and we give half to the leather supplier, signed both by our supplier and by us. This is our confirmation sample. Then once we have seen the quality and agreed on the price, we manage the orders via email. At this stage, we do not use verbal agreements as our Administration Department needs to have a reference to check the prices and pay the invoices*". The fine-tuning required to manage the changes and emergencies along the production phase is managed informally with the suppliers. The commitment of the suppliers is considered very important in this respect as Formentini has to comply with the strict delivery timing required by retailers. "*We are a fashion company with peak periods and a strong pressure on time, especially regarding the replenishment orders. We need to have suppliers that respond immediately, working on Saturday, sometimes also on Sunday, when necessary, to comply with our requests*".

Over the years, Formentini has developed long and stable relationships with most of its component suppliers, even if its existing vendor base is challenged to follow the fashion trend with competitive prices. Analysis of the major key components has highlighted the presence of recurring short-term partnerships for all these components. Such an approach is evident with respect to almost any components, including those that are more related to the fashion trends, such as the external leather.

As to the external leather supplier, the company is relying on two main leather sources – calf and sheep/goat – and for each source it has a preferred supplier. Whenever, in any of the these leather types, there is a new finish or colour relevant to its collection, Formentini pushes its existing suppliers to try and match such a result and, only as a last resort, does the company introduce a new supplier. Established relationships are even more common regarding those components that are less subject to fashion trends, such as soles and internal leather. In all these cases the suppliers are confirmed season after season, as long as they remain very cost-competitive and very reliable as to deliveries.

In evaluating the great emphasis given to established partnerships, the parallel strong pressure towards cost reduction as well as an innovative look should be taken into account. Formentini believes that such a mix can be better achieved by working for a long time with the same suppliers, jointly refining the development and production processes of the fashion collection. "*A supplier in general takes more than one season to understand the way we are working*". The innovative look needs to be matched with a competitive cost and therefore the supplier needs to learn how to balance look and intrinsic quality, saving on components and processing cost whenever possible.

6.5 Cesare Paciotti

Cesare Paciotti is a luxury footwear company traditionally focused on elegant and fashionable shoes. Besides its classic shoes – worn by many celebrities – Cesare Paciotti has launched a sport and free time shoes lines with the brand Paciotti 4US. However, only the Cesare Paciotti premium line is considered in this analysis, i.e. the Paciotti4 US lines are disregarded. The agility approach, the suppliers and the supply relationships of these two product lines are very different and are managed very differently. Analysing the average values would present a distorted view both of the challenges the company is facing and the way the company is working[19].

The Cesare Paciotti premium line offers a wide product portfolio, completely renewed every season. In order to keep quality and secrecy under control, Paciotti produces all its

[19] Cesare Paciotti has a collection renewal rate equal to 100% and is almost fully relying on actual customers' orders for its planning. This is different from Paciotti 4US, where the renewal rate is 52% and most of the orders are planned and launched for stock.

premium line shoes in-house[20] (Table 32).

Table 32 - Profile of Cesare Paciotti (premium line)

Turnover (in mil. euro)	26
Collection renewal rate (% of new articles in collection)	100%
Re-orders after the traditional selling campaign (in %)	7%
Turnover from non-traditional collections (in %)	7%
Samples produced in the District (in %)	100%
Cutting & sewing carried out in the District (in %)	100%
Final assembling carried out in the District (in %)	100%
Leather purchased before the fashion fairs (in %)	35%
Production orders issued before the fashion fairs (in %)	30%

Source: Exploratory survey on "Agility drivers and agile capabilities in the Macerata-Fermo Footwear District", Spring 2011 (Data referring to 2010)

Cesare Paciotti reports a very positive approach to supply partnerships, recognising that its strength in the development of fashionable shoes is based not only on its own creativity and style but also on the great contribution by a local network of components suppliers. "*The supply network allows our footwear company to receive a wide array of proposals that are immediately available and fantastic. When I need to reinvent a shoe, I have got 30 people each one of whom brings a component, so as to allow me to create a new shoe as I'm imagining it. We compete in a world where we work on a fashion proposal made up of 2,500 different samples, developed twice a year and then after every season we throw everything away*"[21].

The company, in its approach to supply partnerships, is balancing two different pressures: the need for renewal vs. the importance of continuity in supply relationships.

[20] To make a comparison, Paciotti 4US is almost completely outsourced, mainly locally but with part of the cutting and sewing activities offshored.

[21] All the quotes for Cesare Paciotti are taken from two interviews that were carried out with the General Manager of the company on October 11th 2012 and February 26th 2013. The evidence from these interviews was reviewed with the General Manager on May 29th 2013 and on June 4th 2013.

The need for renewal (or, at least, for re-allocation) of supply contracts is related to the fact that, from one season to another, the fashion trends might require radically different products. Therefore, the suppliers, based on whether their component/processing is fashionable or not at that time, receive much fewer or more orders, often independently of any consideration related to their past performance as to quality and delivery timeliness. The importance of continuity of supply relationships is related to the fact that over time the company and its suppliers get to know each other better and better. Such experience can help them in facing together more effectively the many predicaments that characterise every fashion season both in the collection development and in the product/delivery phase. "*When a supplier knows you, he also knows your defects and helps you in solving your problems*". The importance of continuity is further strengthened by the need for secrecy in the development of new models. Paciotti in the past has identified a few suppliers that were unreliable under such a perspective and dismissed them in favour of more trustworthy partners. To balance these two contrasting pressures, most of the suppliers are confirmed season after season; however, the actual volumes each of them receives are dependent on whether the fashion trend is in line with their specialised competences and their actual proposals. Supply partnerships that develop and die in a single season are very rare; they might have depended on very peculiar trends in fashion (a special processing or a special component) or on very unusual customer requests (as in the case of shoes set with real diamonds as requested by an Arab Emir) that qualify the relationship as related to non-recurring opportunities.

Information sharing with component suppliers is very important because they play a key role in the definition of the specifications and in the product industrialisation. "*We bring our suppliers the idea and they return to us with the component fine-tuned. I cannot pretend to understand rubber better than a rubber sole producer. It is his job! The same applies to the heels producers, who should know the specific resistance a stiletto heel needs to have in order not to break, as well as to the leather suppliers*". Once Paciotti receives the component prototype, it carries out its own evaluations and tests and often, before the validation of the proposals of the component suppliers, a new round of interactions is required for a better look or fit of the component. A similar approach applies in the case of the specialised subcontractors, because the company has part of its

production carried out in-house and relies on specific suppliers because of their excellence in performing a given process.

Investment sharing with suppliers is quite limited and mainly related to the coverage of the dedicated investments in the moulds that soles suppliers are casting to provide Paciotti with customised soles.

The governance mechanisms ruling the supply relationships are quite informal and this is characteristic of the whole industry. Supply contracts are signed season by season, based on the actual customer orders, given that each model is assigned to a given group of suppliers and therefore the success of that specific model at the fashion fairs and at the following sales campaign has a strong impact on the orders that the group of suppliers will receive. The supply contracts specify the target quantities (sometimes with ± 20%) and the price, but they do not detail the logistics aspects, as these are subject to change according to the recurring emergencies that take place along the season. "*We need to be able to rely on suppliers that, in case we need them urgently, are here on Sunday morning. Trust is very important in the fashion world*". Such a flexible approach also applies to the contractual clauses related to the liability of the suppliers. In case of problems, these clauses are not applied normally, because the two parties try to find a solution, even if different from what was originally agreed contractually.

Analysis of the major key components highlights the presence of recurring short-term partnerships on all these components. Such an approach, characterised by volumes fluctuating season by season, is particularly evident as to external leather suppliers. Establishing supply partnerships with external leather suppliers is a priority for the company, in terms of quality and reliability, given the relevance that the quality of the external leather has both on the look of the shoes and productivity in the factory. However, with the exception of a few evergreen items (such as calf or chamois leather in black or dark brown in the autumn/winter collections), the fashion trends require new materials, finishings and colours to the external leather to give the shoes a new look. Tanneries are very specialised in their production process, so the company is not willing or able to negotiate with most of them with long-term agreements. Moreover, as leather

is a natural product and the quality and availability of a supplier might vary from season to season, the company has multiple suppliers for the most required articles.

Establishing partnerships with non-leather soles suppliers is important but not crucial. There are differences in quality among the suppliers and the company targets the most competent suppliers, with a strong track record for on-time delivery. In this product category, the company has an already established group of reliable suppliers and no major pressure to revise it.

Establishing supply partnerships for interior leather and leather soles is not a priority of the company either, as these components are not as dependent on fashion trends and have the characteristics of commodities. The suppliers in these product categories are mainly selected based on their capability to deliver on time, given that the price is fairly standard.

Analysis of the major service suppliers highlights the importance of collaboration with specialised subcontractors, both for special processing and for the assembling of the finished product[22]. In this case "*It is the high level of competence and specialisation of each supplier that is their best protection and guarantee for contract renewal season after season*". The relationships with the subcontractors in general, and with the assemblers in particular, are less influenced by fashion trends and therefore can be more stable and long-term oriented.

6.6 Fabi

Fabi is a footwear company offering high quality men's and women's shoes. The company relies on high quality materials, innovative design and strong communication to strengthen its market positioning. The company growth has been driven by the export markets, including the emerging Asian markets in which the company is present, and also by its owned shops and distribution agreements.

The company, differently from what characterises the Macerata-Fermo district, is producing almost all its production in-house in the district, with the exception of only a

[22] Paciotti is developing all its prototypes and samples internally and therefore the company has no external collaborations as to design and style.

few processing steps for its sport/casual collection that are carried out in Bulgaria by a local subsidiary. The decision to keep production phases in-house does not apply only to the final assembling but includes also the cutting and sewing as well as the manufacturing of some components, such as leather soles and some accessories. The decision to have all the production internally is considered by Fabi as having two major advantages: shortening the development process, i.e. from the idea to the prototype in just one day, and maintaining greater secrecy for the new collection under development. With respect to the components that are sourced externally, Fabi launches the purchase orders slightly earlier than the timing most commonly adopted in the district, given that it needs to feed its factory and can rely on owned shops whose initial instalment is decided to a large extent before the fashion fairs (Table 33).

Table 33 - Profile of Fabi

Turnover (in mil. euro)	40.6
Collection renewal rate (% of new articles in collection)	90%
Re-orders after the traditional selling campaign (in %)	5%
Turnover from non-traditional collections (in %)	15%
Samples produced in the District (in %)	100%
Cutting & sewing carried out in the District (in %)	80%
Final assembling carried out in the District (in %)	100%
Leather purchased before the fashion fairs (in %)	30%
Production orders issued before the fashion fairs (in %)	20%

Source: Exploratory survey on "Agility drivers and agile capabilities in the Macerata-Fermo Footwear District", Spring 2011 (Data referring to 2010)

Fabi's strategy is strongly driven towards excellence – an excellence that is made up of innovative design and high quality materials, but also of a constant and deep control of every detail[23]. "*In the past my father used to do the final finishing and polishing of the shoes personally and if he found a defective lot, he used to return it to the production*

[23] All the quotes for Fabi are taken from two interviews that were carried out with the CEO and the Commercial Manager of the company on October 23rd 2012 and June 4th 2013.

for rework saying 'My name is written on these shoes!' He did it even if it caused a delay in the delivery". Such an approach strongly influences the vendor selection process and the development of supply partnerships. Supply partnerships are considered very important and appear as based mainly on knowledge sharing, while investment sharing is quite limited and the use of trust-based mechanisms, while still much used, is questioned.

Knowledge sharing with the suppliers is recognised as very important from the initial phases of the collection development. Fabi is positioned in the high end of the market and requires its suppliers to contribute to creating its exclusive look. The company is developing internally all the models in the collection, including the definition of the details and technical specifications for the main components, but it relies on its suppliers in order to optimise the production process and the final result. "*If we require a transparent or an opaque sole, we already have in mind its price range and its technical specifications. However, we leave the selected supplier to fully industrialise that item, carrying out also the development of the model across all the shoes sizes*"[24]. The knowledge exchange is also very important during the production phase due to the frequent rescheduling of the production. "*A planned product might be delayed because of a missing component, even if the missing component is only a small accessory. In order not to stop production, we try to anticipate the production of articles that were originally scheduled for a later delivery. We therefore check whether our suppliers are able to readjust to such changes in the production plan*". Small size suppliers are considered in general to be better able (and more willing) to follow the company in its frequent rescheduling, while large suppliers are considered to be more rigid.

Fabi is not sharing investments with its suppliers. It is selecting their suppliers based on their skills and the competences they already have, without any major need to be supported by Fabi in terms of shared investments.

The trust based governance mechanisms are widely used, as this is common practice in the Macerata-Fermo district. However Fabi is progressively moving towards formal

[24] A pair of shoes is developed and is prototyped with respect to just one size. Based on the characteristic of the prototype, the suppliers are required to proportionally develop all the shoes sizes.

contracts in order to be able to claim more effectively its rights whenever a given supply shows quality problems or is delivered late.

Fabi looks for high performing suppliers and selects them very carefully. In most of the cases, given the company positioning in the top range, these suppliers are niche suppliers with a very high quality offer. Moreover, given that Fabi offers a wide variety of models, sometimes producing less than 10 pieces of a single model, it requires suppliers who are willing to work with very small lots; these suppliers are normally small companies. Even if the suppliers' selection process is very long and tough, sometimes problems arise and underperforming suppliers are abandoned. The statement that "experience is the summation of all the mistakes done in the past!" well represents the inclination of the company towards the development of long-term relationships so as to reduce the supply risk. At the same time, Fabi is always looking for new ideas for renewing its collection and therefore it always requires innovative suppliers able to effectively respond, sometimes even contribute, to shape fashion trends. In order to balance these two different pressures – stability and innovation – Fabi has built a very wide portfolio of potential suppliers over the years: almost 150 for external leather, 20 for internal leather and more than 10 for non-leather soles. On the basis of the fashion trends and on the collection's desired look, Fabi choose season after season the best fitting suppliers. Some of these suppliers are selected every season and they become long-term partners of the company. Other suppliers are involved only on a spot basis. However, also in the case of small, short-term orders, Fabi keeps track of the supplier profile regarding its capabilities and performance, in order to be able to involve that supplier again should the market trends require a given component or process in which the supplier is specialised.

The external leather is the supply category where the variety and change is more important and therefore where several suppliers are managed as short-term partners. "*External leather cyclically changes and when the fashion trend again requires a certain type of leather, the suppliers we already know are the first to be contacted*".

The internal leather is less sensitive to fashion trends, therefore it can be purchased in larger lots and with more standard characteristics. However, given Fabi's positioning in the high end of the market, sometimes the internal leather does become a critical

component. This is often the case with the boots where the internal leather needs to be wide enough not to cause any problem in the assembling phase but, even more, it might have to be selected in a non-standard colour in order to match the external leather so as to create a “total look” effect.

The non-leather soles are mainly sourced from a stable, local vendor base. The development of a customised non-leather sole requires a significant, dedicated investment; its production also requires great flexibility, given the frequent set-ups required. The company believes that only a few small-sized local suppliers are able to develop and deliver non-leather soles with the quality and timing they require. Therefore, in this supply category, partnerships tend to be long-term.

6.7 Manas

Manas is a footwear company specialised in the production of women’s shoes. In the past it used to target the medium-low price range market but starting from 2007 the company made a relevant brand repositioning toward the medium-high segment. The repositioning had a major impact on the suppliers, given that many suppliers did not have the quality and the capabilities required by the new company positioning.

Manas offers a wide product portfolio (275 different articles every season) almost completely renewed every season. In terms of purchasing and planning, Manas tends to postpone the bulk of its leather purchases and all its confirmed production orders to subcontractors until after it has acquired firm orders from its customers. In line with the majority of fashion district companies, it is outsourcing most of its production to external contractors located in the district, while producing internally the prototypes and samples (Table 34).

Table 34 - Profile of Manas

Turnover (in mil. euro)	36.9
Collection renewal rate (% of new articles in collection)	97%
Re-orders after the traditional selling campaign (in %)	5%
Turnover from non-traditional collections (in %)	0%
Samples produced in the District (in %)	100%
Cutting & sewing carried out in the District (in %)	100%
Final assembling carried out in the District (in %)	100%
Leather purchased before the fashion fairs (in %)	30%
Production orders issued before the fashion fairs (in %)	0%

Source: Exploratory survey on "Agility drivers and agile capabilities in the Macerata-Fermo Footwear District", Spring 2011 (Data referring to 2010)

Manas reports a generally positive approach towards supply partnerships, as highlighted by the interview with the company general manager[25]. Given that all its suppliers need to perform in terms of cost competitiveness, reliability, punctuality, quality and problem solving swiftness, Manas adopts with its key suppliers all the three elements of characterising partnerships: information sharing, investment sharing and informal governance mechanisms.

Information sharing with suppliers is a continuous process, both during the collection preparation and the production/delivery phase. "*There is a sort of 360° involvement and the most relevant suppliers (mainly leather, soles and forms) are strongly linked with us and they are always at our premises*". The involvement is so relevant that sometimes it becomes a sort of joint development of the fashion collection, with important inputs coming from the suppliers. "*The fact that these suppliers are all located very close to us makes information sharing easier. The information exchange is daily and total, given that our suppliers know what the purpose of their supply is, both in terms of collection development and in terms of regular production. If we have quality or delivery*

[25] All the quotes for Manas are taken from two interviews that were carried out with the General Manager of the company on October 12th 2012 and on February 12th 2013. The evidence from these interviews was reviewed with the General Manager on May 29th 2013.

problems they are immediately at our premises to solve them. Even more, the external stylists develop our fashion collection – physically staying in our premises". Such cooperation with the suppliers is considered by Manas as quite typical of the fashion industry because the decisions need to be taken fast, and therefore the information needs to be exchanged to plan at the beginning of the season and then to cope with the changes. "*Every season we meet for a full week with all our subcontractors. We meet them to fine-tune the production processes, to explain the characteristics of the items we are going to produce and their technical specifications*".

The investment sharing characterises, to a relevant extent, supply relationships in some supply categories. It applies in particular towards small-medium contractors who might lack the financial strength to invest and mainly involves their ICT infrastructure. "*We support the suppliers that have less economic and financial strength in the investments. We have shared several investments in the IT system. In the past year we changed our IT system and supported them to move towards a web-based IT system. We have shared investments in videoconferencing. For instance they bought the TV set and we gave them all the videoconferencing equipment. We have supplied some of them with an iPad or an iPhone for making videoconferences over Skype. We have also supplied them with laser printers on the factory floor in order to print labels and bar codes*". In some cases support given to subcontractors can also be related to the purchase of specific production machinery that is then rented to their suppliers. "*Two years ago there was the case of a piece of equipment for sole cutting, at the time its cost was around €200,000*".

The company – as is common practice in the industry – is sharing the investments that the soles suppliers are making when they develop customised moulds that will be used for producing a certain type of sole exclusive to Manas. Under such circumstances the soles supplier might charge the mould depreciation to the company or, whenever it is not guaranteed a minimum order, require to be covered in its dedicated investment. The economic value of the mould lasts as long as the life of the model for which it is designed (or subsequently adapted) and therefore it is very much constrained by fashion trends. Moreover, Manas invests in its subcontractors in terms of competences, consulting and, more recently, financial support. "*We have moved along the years from*

an agreement of where they were purchasing on their own the components and then we were buying back the finished shoes, to an agreement of contracting (conto-lavoro). Therefore we buy all the materials and they become pure contractors, selling us only manpower. This is aimed at supporting a supplier base that in this period of crisis is no longer able to pay in advance the cost of the materials but is paid once they have assembled the shoes".

The governance mechanisms ruling the supply relationships are, in general, quite informal, which is characteristic of the whole fashion industry. "*All our industry is very informal. Up to a few years ago the contract did not exist. Now we work with a base contract but among the lines of the contracts there are thousands of facets that are governed by mutual friendship and esteem. There is a long list of contingencies that are governed by a handshake more than by a written agreement. There is a relationship that is based on trust that goes beyond the contract. However, for formal compliance, the contract needs to be there. The non-compliance cases up to a few years ago were managed in an informal manner. We tried to get to an agreement, eventually with a discount, for the following season. We were one of the companies that did not apply any penalty clause. Even now a formal procedure doesn't happen often, given that our suppliers are quite loyal and reliable*".

Analysis of the major key components has highlighted the presence of partnerships in almost all the supply categories. All these partnerships, however, are characterised by volumes fluctuating season by season; even suppliers that have an excellent track record as to quality and delivery might see their orders decreasing because they are involved in a series of models that were not appreciated at the fashion fairs or during the following selling season. In the period 2011-12 around 20-25% of its key components suppliers saw their orders very much reduced because of a misfit with fashion trends, even if their past performance as to quality and delivery was good.

Establishing partnerships with external leather suppliers is a priority for the company. However, given the variety of materials, finishing and colours Manas is offering in its collections, the company relies every season on 20 different tanneries, each of them specialising in a specific type of supply. The broadness of the supply base is also related to the fact that the company wants to have alternative suppliers for all those kinds of

materials and suppliers that are considered critical. The supply base is quite stable throughout the year – in spite of volumes fluctuating season after season. However, the company is regularly looking for new suppliers, considering that external leather is a key element, to widen and refresh their footwear collection. Every year Manas stylists attend the major leather fair – Linea Pelle in Bologna – to look for new materials and potentially new suppliers. In spite of the relevance of external leather for the look of the shoes, collaboration with the tanneries in the development phase is mainly based on the seasonal leather collection proposed by the tanneries, rather than the joint development of any customised finishings. The collaboration with the tanneries becomes more relevant during the production stage, as the external leather suppliers are required to keep on feeding the production process according to plans that are often revised. In spite of such collaboration, however, the external leather suppliers still represent a major bottleneck which prevents Manas from achieving good performance regarding its replenishment orders. "*Replenishment is not a strength of the company, and many customers are highlighting our rigidity with respect to their requests. Such rigidity is mainly due to the lack of flexibility in sourcing the required materials, mainly the external leather. To improve our performance towards our customers, we are trying to anticipate the requests from the trade with a simulation based on the actual sell-out of its products. In the Autumn/Winter collections the forecast is easier and we are able to identify in advance the leather/colours that are likely to be requested for replenishment. In the Spring/Summer collection it is a drama, given the explosion of colours*".

Establishing partnerships with internal leather suppliers is not a priority of the company. Every season Manas relies on four to five different suppliers, each of them specialising in a specific material. The company has started sourcing part of their internal leather requirements from abroad, for instance they have an important supplier in Pakistan. Therefore, while such a supply category is not considered critical, the company is paying more attention to having alternatives in case a supplier – especially a remote supplier – is facing problems in delivering on time.

Establishing partnerships with soles producers is very important for the company. The company relies on three to five suppliers for the leather soles and five to six for the non-leather soles, with a limited turnover in the supply base over time but with fluctuating

volumes from one season to the next. Collaboration with the soles suppliers is very important from the development stage, as the development of leather soles has a strong impact on the overall look of the shoes and the development of non-leather soles is often based on customised prototypes requiring dedicated investments in moulds that are often shared. The collaboration with the soles producers continues during the production phase in order to cope with changes in the production schedule. However, except for the cases of underperforming suppliers, it is very rare that the company has to face delivery emergencies in this supply category.

Manas has a strong collaboration with several external designers. Since 2007, when the company decided on a major market repositioning, Manas has established a collaboration with five to six stylists, each of them specialised in a different product line. Collaboration with the stylists is evaluated both in terms of their activity (mainly the prototypes they are developing) and of the sales results at the end of the season. Based on these results the following season collaboration is expanded or reduced.

Collaboration with all the subcontractors, mainly with those in charge of product assembly, is very strong. Manas organises every season, with every shoes assembler individually, a technical meeting during which they revise the performance and any specific problems from the previous year, including customer complaints, as well as presenting and discussing the products for the incoming season. Collaboration is also very strong with subcontractors specialised in specific processes, such as the "diving[26]" in recent collections. These specialist subcontractors have know-how that is critical for the final look of the shoes and Manas relies a great deal on their competence. At the same time, such a relationship can be short-term, given the frequent and sudden changes in fashion trends. To be prepared for offering a wide variety of models, the company has over the years developed a database with very many contractors, keeping track of their specialisations and performance. Therefore there can be "sleeping" supply relationships that can be reactivated quickly in case the fashion trend is asking again for a particular process (or a slightly modified version of it).

[26] "Diving" is a colouring process where the upper part of the shoes is dived in an industrial washing machine, a process that is very similar to the one used for jeans.

As a general rule, Manas involves every key supplier in the development of the new models and, in general, each supplier receives a full supply of the articles he was involved with in the design and prototyping phase. "*The key suppliers are always involved from the initial prototypes, up to the prototypes and samples development and then the regular production, in a process that requires many changes. The suppliers who have already developed and modified the prototypes and the samples, are ready to work with the company's technical department to industrialise the product and start the production without any problem*". At the same time, Manas assesses the performance of each supplier in terms of quality and respect of delivery times. In the case of operational underperformance, Manas identifies an alternative supplier and allocates part of the production to it. In 2011-12 about 20% of the suppliers were considered not to be fully reliable and therefore they were coupled with an alternative supplier. Even in the case of operational underperformance, the company prefers not to close down suddenly any supply relationship because established suppliers are important for a fast ramp-up of the production process. Manas is more inclined to give its suppliers a chance to improve, supporting them in terms of know-how and problem-solving. Only if the supplier performance does not improve after such support, does Manas close down the relationship.

Manas' approach towards partnerships has changed in the past few years due to the disruptive impact of a radically changed market scenario. "*Ten years ago sourcing was much simpler, given that there were four or five materials, in three or four colours, and they lasted for two or three years. Today there are 20 or 30, even 35 materials, with a wide variety of colours*". Moreover, the company's repositioning in a higher fashion segment has also increased the variety and difficulty of planning, considering that there are many competitors in the market and that customers are able to choose from very many alternatives. All these uncertainties are shared upstream with the supply network.

6.8 The approach of small-medium companies to supply partnerships

The characteristics of supply partnerships developed by the six medium-large footwear companies described above have been briefly compared with the experiences of four small-medium footwear companies to see how much company size impacts on the decisions regarding supply partnerships.

According to the criteria identified in the research methodology chapter, the four selected footwear companies are: Bruè, Romit, Lillian and Lepi. Their profiles are reported in Table 35.

Table 35 - Profile of selected footwear SMEs

Bruè	
Turnover (in mil. euro)	13.5
Collection renewal rate (% new articles)	80%
Re-orders after traditional selling campaign (in %)	10%
Turnover from non-traditional collections (in %)	0%
Samples produced in the District (in %)	100%
Cutting & sewing carried out in the District (in %)	90%
Final assembling carried out in the District (in %)	100%
Leather purchased before fashion fairs (in %)	20%
Production orders issued before fashion fairs (in %)	10%

Romit	
Turnover (in mil. euro)	10.3
Collection renewal rate (% new articles)	90%
Re-orders after traditional selling campaign (in %)	15%
Turnover from non-traditional collections (in %)	0%
Samples produced in the District (in %)	100%
Cutting & sewing carried out in the District (in %)	65%
Final assembling carried out in the District (in %)	100%
Leather purchased before fashion fairs (in %)	40%
Production orders issued before fashion fairs (in %)	0%

Lillian	
Turnover (in mil. euro)	5.3
Collection renewal rate (% new articles)	100%
Re-orders after traditional selling campaign (in %)	20%
Turnover from non-traditional collections (in %)	0%
Samples produced in the District (in %)	100%
Cutting & sewing carried out in the District (in %)	100%
Final assembling carried out in the District (in %)	100%
Leather purchased before fashion fairs (in %)	20%
Production orders issued before fashion fairs (in %)	0%

Lepi	
Turnover (in mil. euro)	3.5
Collection renewal rate (% new articles)	90%
Re-orders after traditional selling campaign (in %)	2%
Turnover from non-traditional collections (in %)	0%
Samples produced in the District (in %)	100%
Cutting & sewing carried out in the District (in %)	10%
Final assembling carried out in the District (in %)	100%
Leather purchased before fashion fairs (in %)	0%
Production orders issued before fashion fairs (in %)	0%

Source: Exploratory survey on “Agility drivers and agile capabilities in the Macerata-Fermo Footwear District”, Spring 2011 (Data referring to 2010)

Bruè has been leveraging on supply partnership since the starting phases of the collection development process[27]. "*We carry out internally most of the technical development of the shoes and when we contact the suppliers, we are able to give them detailed specifications. However, the suppliers very often offer us alternatives and improvements based on their specific technical knowledge in order to obtain the best results at the lowest cost*". While the change in fashion trends might impact on given supplies, the goal of the company is to create a long-term partnership, even if based on a short-term contract, even informal agreements. "*In 1988 a new stylist came to talk to us offering his ideas. When he asked for a contract, my father told him: 'Look, if we get along well together, you will get tired of working with us. Otherwise our collaboration will not last more than a couple of seasons. Where is the need for a contract?' This stylist is still working with us after more than 30 years!"* In the specific case of leather soles, Bruè's link with the supplier is very strong, as its main supplier was once their foreman in charge of the leather sole production before the company's decision to outsource such production. The short-term partnership is considered to be an approach that only large firms can manage, because of its complexity but also because it is difficult to get a supplier to accept it unless the returns in the short-term are significant (as in the case of a high-value order). In commenting on short-term partnerships, Brué is also presenting the supplier side view, given that Brué is also a supplier of finished shoes to non-shoes fashion brands (20% of its turnover). The main risk is that "*The large brand uses you in order to launch new models and get a given positioning. Then once the reputation is established and the volumes of sales are growing, often the large brand offshores the production in order to become more cost-competitive. ... We were supplying company X. When we were producing 50,000 pairs of shoes per season on the collection line, we were the right partner for them. Once the production overtook 100,000 pairs, and then 200,000 pairs per season, the fashion brand decided to offshore*".

Romit stresses the importance of partnership across the whole supply network, highlighting that strong collaboration within the supply network has always been the

[27] All the quotes for Brué are taken from an interview that was carried out with the owner of the company on October 22nd 2012.

key strength of the footwear district company, allowing footwear companies to offer a wide variety under the time pressures of the collection development[28]. "*You surely need specialised expertise in order to develop a fashion shoe for the Chinese market considering that Chinese feet have a different profile and therefore you have to develop a different shape as well as give a look coherent with that different shape*". However, the strong competition that is taking place in the footwear industry is putting at risk the local supply network. "*Given that there are rules on the supply contracts, there is a tendency towards emphasising cost-reduction targets, even if these are detrimental to quality. The large brands should campaign for better ruling on the supply contracts and protect the local supply network*". The support given to the local supply network is not meant as a guarantee for any single supplier, considering the changes in fashion trends and the need for renewing the seasonal collection. However, there are activities and components where stability can be reached. "*Some materials are subject to a continuous change – as the choices related to the leather and the accessories, in particular, need to follow the fashion trends. However, the innovation can be partially carried out by the same suppliers and also part of the innovation is not related to the style but to the technical characteristics of the shoes, in particular to their comfort. There is ample room for establishing long-term relationships*". Romit has always developed its business balancing innovation and continuity. "*We are producing classic men shoes and, in spite of all the changes we are continuously making, have a stylist who has been working with for 32 years. We have added several new stylists, but that specific stylist is always with us*".

Lillian, one of the largest "small businesses" in the Macerata-Fermo district, is serving mainly a niche, winter, women's shoes for the Dutch and Belgian markets[29]. With respect to such a market the company has developed a precise market know-how and is developing its collection in strict collaboration with an external stylist and with its local sales agents. The component suppliers are involved during this process but collaboration with them is quite limited as they are asked limited customisation. "*The*

[28] All the quotes for Romit are taken from an interview that was carried out with the owner of the company on November 20th 2012.
[29] All the quotes for Lilian are taken from an interview that was carried out with the owner of the company on October 23rd 2012.

stylist develops the model and then meets our established suppliers to see what they are proposing for their new collections [i.e. new finishings and new colours]. Then, together with our stylist, we select what best fits with the requirements of our target market". Most of the supply relationships Lillian establishes are long-term. Every year the company allocates the production orders among its different suppliers (including the assemblers) based on their different specialisations, with fluctuations that might significantly change from year to year. However, the overall supply base is quite narrow and stable. Mutual trust is important because once the orders are assigned only limited changes are possible. "*A few years ago we had an assembler which was very underperforming both in terms of quality and in respect of delivery dates. However, we were too much into the fashion season to be able to stop the order with him and move it to another supplier*". Lillian therefore had to remain with that supplier until the seasonal orders were completed but since then they have never done any more business with that company. In order to avoid all the risks and costs related to underperforming suppliers, Lillian prefers to stick as much as possible with established suppliers.

Lepi relies very much on supply collaboration, believing that an effective collaboration can be developed only with small size suppliers[30]. "*We are a small company and therefore we cannot impose much on our suppliers. We share some knowledge with them but mainly we are following the novelties they are offering us*". Lepi believes that a large supplier is serving in a privileged way its large customers and, even more, a supplier is willing to invest in a customised offer only when it sees that volumes are large enough. Small size suppliers, on the other hand, try to establish a long-term relationship with their customers, even when they are small footwear companies.

It appears that partnerships are relevant also for small-medium footwear companies. However, their development is more difficult given that often SMEs are not an attractive partner because of the limited sales volumes involved. The supplier is less interested in sharing knowledge to jointly innovate the product offer and tends to propose a standard component, given the uncertainty on the returns from customised investments.

[30] All the quotes for Lepi are taken from an interview that was carried out with the owner of the company on November 27th 2012.

6.9 Longitudinal analysis of purchase orders

Two medium-large companies among the six selected for the in-depth case studies have provided detailed accounting data on their purchase orders of shoes' key components across eight years (2005-2012). For confidentiality reasons the names of these companies as well as the names of the suppliers cannot be reported. The details of all the individual purchase orders are reported in Appendix D.

The longitudinal analysis of the purchase orders assigned to the different suppliers aims to identify the long- and short-term supply partnerships. All the data presented are expressed in terms of a percentage of the total yearly spending in a given category.

The concentration of purchase orders in each supply category has been analysed as it gives important indications about the supply strategy. The concentration ratios (in terms of the shares of the three largest yearly suppliers) as well as the number of the suppliers have been chosen as indicators of the concentration in a given category.

The number of new suppliers (and their share) has been analysed as it gives an idea of the turnover in the supplier base. Moreover, given the specificities of the fashion industry, the analysis also focused on the number of "sample" suppliers. These "sample" suppliers are companies that provided material/components in the prototyping and sampling phase but whose material/components were not used in the models included in the season's collection presented at the fashion fairs. Therefore these suppliers did not have the opportunity to provide larger quantities for the large-scale production and their yearly share remains almost negligible (below 1%). Their presence, however, is a very important indicator of how much supply variety the company is looking at during the collection development stage. The "sample" suppliers can be existing suppliers or new suppliers.

For a better understanding of the duration and stability of the partnerships in each supply category, the spending share of the three largest suppliers in 2012 has been followed across the whole period. Suppliers that have kept a relevant and stable presence along the years are considered strategic partners. Suppliers that have not managed to acquire orders during the whole period but they appear for a very short period, sometimes with a fluctuating share, are considered agile partners.

6.9.1 Longitudinal analysis of purchase orders by Company A

Company A has provided detailed accounting data on its purchase orders related to external leather, internal leather, leather soles and non-leather soles.

For its external leather requirements, Company A has developed a supply portfolio that includes a few suppliers with whom the company has built a *de facto* long-term relationship and very many suppliers that rotate over the years (Table 36).

More specifically, Company A relies mainly on two consolidated suppliers from which in the past six years it acquired on average 57% of its need for external leather[31]. Each of these two suppliers specialises in a different kind of leather and they are not direct competitors, given that the different order volumes they acquire from year to year are dependent on the designers' choice and even more on the customer preferences for a given kind of leather. The relationship with these two companies, while based on a series of short-term contracts, has all the characteristics of a strategic long-term partnership. The need for variety and newness is dealt with – on top of the contributions from these two long-term partners – through a very wide supplier base. In the past eight years, the company has had on average 32 different suppliers per year, including an average of 14 new suppliers per year. Within such a wide supplier base there are suppliers which provide leather types and finishings for niche targets as well as suppliers that are completing the supplies for the most widely used kinds of leather and are representing a second sourcing alternative with respect to the two leading suppliers.

Out of these 32 external leather suppliers that every year are actively supplying company A, on average 20 of them are "sample" suppliers that are involved in the prototyping and sampling phase but have not managed to be included in the fashion collection presented at the fashion fairs. Their share is below 1% and very seldom these suppliers are selected again for another trial order.

The characteristics of the relationships within such a category highlight the joint presence of two long-term partnerships and several agile partnerships.

[31] The reference here is six years because one of these suppliers started doing business with Company A in 2007.

Table 36 - Company A: synthetic indicators related to external leather purchases

	2012	2011	2010	2009	2008	2007	2006	2005
Share of the largest yearly supplier *	34%	38%	39%	39%	39%	39%	46%	47%
Share of the two largest yearly suppliers *	63%	67%	57%	50%	55%	52%	52%	57%
Share of the three largest yearly suppliers *	72%	75%	70%	60%	68%	63%	58%	61%
Number of suppliers	20	28	27	46	31	31	37	38
New suppliers (share)	5 2%	13 6%	7 4%	26 5%	15 6%	14 22%	19 19%	N.A. N.A.
"Sample" suppliers (share)	12 3%	17 4%	16 4%	34 11%	23 8%	19 7%	21 8%	19 9%
Share of the largest 2012 supplier	34%	30%	18%	11%	13%	11%		
Share of the second largest 2012 supplier	29%	38%	39%	39%	39%	39%	46%	47%
Share of the third largest 2012 supplier	9%	4%	13%	1%				

* The yearly share is based on the yearly ranking and the suppliers taken into account might vary from year to year.

For its internal leather requirements, Company A relies mainly on a major supplier for the majority of the company requirements plus a few other suppliers completing the remaining seasonal requirements[32]. The selection of the supplier from which the company sources the majority of its internal leather requirements is mainly based on cost and logistic consideration. Over the eight years taken into account, three different suppliers were selected in different periods as the yearly major supplier, highlighting a relevant turnover in this category (Table 37).

The characteristics of this material – and in particular its limited relevance to the look of the shoes – make the search variety and newness almost irrelevant. Therefore – with the exception of two years of radical change in the supply base – the search for new suppliers, as well as the selection of suppliers to be involved in trial orders, is quite

[32] With the exception of 2008 and 2009, when the share of the major supplier was respectively 19% and 27%. During these two years Company A changed its leading supplier in this category.

limited. At the same time, the significant share acquired by single suppliers can be related to the opportunity to obtain discounts based on the quantity purchased as well as specific pricing opportunities. Moreover, the need for collaboration and information sharing with the supplier is much less relevant, limiting the potential for high-involvement partnerships. In this category, it appears that market mechanisms more than supply partnerships inform the sourcing strategy of company A.

Table 37 - Company A: synthetic indicators related to internal leather purchase

	2012	2011	2010	2009	2008	2007	2006	2005
Share of the largest yearly supplier *	65%	62%	46%	19%	27%	65%	60%	46%
Share of the two largest yearly suppliers *	83%	83%	64%	36%	48%	75%	74%	69%
Share of the three largest yearly suppliers *	95%	98%	75%	51%	59%	83%	84%	76%
Number of suppliers	5	6	7	20	14	13	9	9
New suppliers (share)	2 5%	1 1%	1 5%	13 60%	6 39%	8 11%	4 14%	N.A. N.A.
"Sample" suppliers (share)	0 0%	2 1%	0 0%	9 3%	2 1%	8 4%	1 0%	0 0%
Share of the largest 2012 supplier	65%	62%	46%	15%	11%			
Share of the second largest 2012 supplier	18%	15%	8%	19%	27%	65%	61%	23%
Share of the third largest 2012 supplier	12%	21%	6%	14%				

* The yearly share is based on the yearly ranking and the suppliers taken into account might vary from year to year.

For its leather sole requirements, Company A relies mainly on one supplier for the majority of the material required plus a few other suppliers for completing the seasonal requirements. Since 2007 the company has relied on the same supplier (who provides on average 52% of the leather soles requirements of the company), making such a relationship very similar to a long-term relationship. In general, the relationships with less relevant suppliers are also quite long, lasting on average four to five years (Table 38).

The leather soles are considered relevant for their impact on the look of the shoes, even if they tend to be related to the more classic models, making less critical the search for a wide supplier base; in the past six years the company has purchased its leather soles from eight different suppliers, with a high stability in the supply base even if with significant changes in the shares of the different suppliers. This supply category appears more inclined towards long-term partnership.

Table 38 - Company A: synthetic indicators related to leather soles purchase

	2012	2011	2010	2009	2008	2007	2006	2005
Share of the largest yearly supplier *	43%	69%	45%	46%	43%	64%	65%	94%
Share of the two largest yearly suppliers *	60%	80%	67%	78%	60%	76%	92%	100%
Share of the three largest yearly suppliers *	73%	87%	87%	84%	73%	84%	98%	--
Number of suppliers	8	8	9	10	8	8	4	2
New suppliers	1	0	1	4	1	6	3	N.A.
(share)	7%	0%	0%	12%	10%	91%	35%	N.A.
"Sample" suppliers	0	0	1	1	0	0	0	0
(share)	0%	0%	0%	1%	0%	0%	0%	0%
Share of the largest 2012 supplier	43%	69%	45%	46%	43%	64%		
Share of the second largest 2012 supplier	17%	7%	20%	32%	17%	1%		
Share of the third largest 2012 supplier	14%	1%	2%	2%				

* The yearly share is based on the yearly ranking and the suppliers taken into account might vary from year to year.

As to non-leather soles, Company A has based its supply strategy on a single supplier, from which over the past eight years it has acquired on average 78% of its needs. Such a high concentration is mainly due to the fact that in the past Company A was focused on a single type of non-leather sole. Moreover, the importance of receiving the soles in times for the final assembling, without having delays in the production flow, was presented as the main reason for establishing such a concentrated and long-term partnership (Table 39).

In the past two years the supply base has been enlarged and renewed (14 suppliers in 2011 and 11 suppliers in 2012), with a surge in new suppliers, even if most of them worked on the prototypes and samples but did not manage to have their model included in the final seasonal collection.

This category used to be characterised by a single long-term strategic partnership. However, Company A – as already evident in the shift carried out starting from 2011 – is targeting to get more variety and it is trying to build up additional relationships, with the goal to develop some of them into stable and long-term partnerships.

Table 39 - Company A: synthetic indicators related to non-leather soles purchase

	2012	2011	2010	2009	2008	2007	2006	2005
Share of the largest yearly supplier *	65%	70%	86%	78%	60%	88%	85%	91%
Share of the two largest yearly suppliers *	74%	82%	91%	88%	77%	97%	96%	96%
Share of the three largest yearly suppliers *	81%	88%	94%	98%	93%	100%	100%	99%
Number of suppliers	11	14	6	5	6	3	3	4
New suppliers (share)	0 0%	8 12%	2 3%	1 1%	3 7%	0 0%	0 0%	N.A. N.A.
"Sample" suppliers (share)	3 2%	7 3%	0 0%	1 1%	0 0%	0 0%	0 0%	0 0%
Share of the largest 2012 supplier	65%	70%	86%	78%	60%	88%	85%	91%
Share of the second largest 2012 supplier	10%	6%		1%				
Share of the third largest 2012 supplier	7%	12%	4%	11%	18%	9%	4%	5%

* The yearly share is based on the yearly ranking and the suppliers taken into account might vary from year to year.

6.9.2 Longitudinal analysis of purchase orders by Company B

Company B has provided detailed accounting data on its purchase orders related to external leather, internal leather and non-leather soles; leather soles are negligible and therefore have not been analysed.

For its external leather requirements, Company B used to rely on a supplier portfolio that included two stable major suppliers; however, neither of these two historical suppliers received many orders in 2012. In general it appears that there are very many suppliers that the company has rotated over the years (Table 40). To enlarge its seasonal collection, in the past three years the company has more than doubled the number of its suppliers in this category, moving from an average of seven suppliers in the period 2005-2009 up to an average of almost 21 in the period 2010-2012. In parallel, in the past three years there has been a surge in the number of new suppliers (on average 10 new external leather suppliers per year), even though part of them supplied only the initial stage of the collection development without being able to enter into the final collection.

The characteristics of the relationships are shifting from being centred on two long-term partnerships to being built on several agile partnerships. It appears that the three external leather suppliers that acquired the largest share of purchase orders in 2012 are all new (or relatively new) suppliers.

For the future, Company B believes that it might be possible to maintain a wide collection offer, relying on a smaller number of partnerships as long as one or two tanneries are willing to jointly develop a postponement strategy. The goal is to develop a semi-finished leather that might be configured with a very short lead-time so as to provide the variety Company B is asking for, with the timeliness required by the fashion business.

Table 40 - Company B: synthetic indicators related to external leather purchase

	2012	2011	2010	2009	2008	2007	2006	2005
Share of the largest yearly supplier *	14%	26%	55%	68%	80%	68%	43%	43%
Share of the two largest yearly suppliers *	27%	40%	68%	88%	94%	98%	81%	60%
Share of the three largest yearly suppliers *	39%	51%	74%	92%	97%	100%	88%	73%
Number of suppliers	22	21	19	10	5	5	7	8
New suppliers	9	9	13	8	2	1	1	2
(share)	37%	33%	20%	12%	3%	2%	7%	12%
"Sample" suppliers	7	9	10	3	1	2	2	1
(share)	2%	4%	3%	0%	1%	0%	0%	0%
Share of the largest 2012 supplier	14%							
Share of the second largest 2012 supplier	13%	10%						
Share of the third largest 2012 supplier	12%							

* The yearly share is based on the yearly ranking and the suppliers taken into account might vary from year to year.

As to the internal leather, Company B relies on two major long-term suppliers that together have supplied on average 93% of its internal leather requirements. These two suppliers in the period from 2005 to 2010 always received jointly 100% of the company's order for internal leather (with the exception of 2008 where their joint share was 94%). In recent years such a pattern has been revised and in 2011 two additional suppliers were introduced to the supply list. These new suppliers are progressively gaining a larger share of the orders (Table 41).

In spite of the characteristics of this material – that has a limited relevance on the look of the shoes and can be sourced in advance without any major risk in case of overstock – this category is managed based on two very long and stable relationships. This category, given that it does not require high-involvement with the suppliers, appears to have some characteristics of durable arms' length relationships. The company currently is reviewing its sourcing strategy.

Table 41 - Company B: synthetic indicators related to internal leather purchase

	2012	2011	2010	2009	2008	2007	2006	2005
Share of the largest supplier	49%	54%	64%	67%	50%	63%	74%	80%
Share of the two largest suppliers	77%	86%	100%	100%	94%	100%	100%	100%
Share of the three largest suppliers	93%	98%	--	--	97%	--	--	--
Number of suppliers	4	4	2	2	5	2	2	2
New suppliers (share)	0 0%	2 14%	0 0%	0 0%	3 6%	0 0%	0 0%	0 0%
"Sample" suppliers (share)	0 0%	0 0%	0 0%	0 0%	1 1%	0 0%	0 0%	0 0%
Share of the largest 2012 supplier	49%	54%	64%	67%	50%	63%	74%	86%
Share of the second largest 2012 supplier	29%	12%			3%			
Share of the third largest 2012 supplier	16%	33%	36%	33%	44%	37%	26%	14%

* The yearly share is based on the yearly ranking and the suppliers taken into account might vary from year to year.

Company B, regarding non-leather soles, has relied on four major suppliers that jointly have covered on average 50% of its requirements. None of these four suppliers has been the major supplier for more than two consecutive years or has had a share above 31%; all of them have always had very fluctuating shares (Table 42).

The remaining 50% is covered through very many different suppliers (on average 10 per year) with a fluctuating and non-stable presence, ranging from 13% down to 0%. On average there are four new non-leather soles suppliers per year and, again on average, two of those suppliers are selected for the large-scale production.

There is just one exception to such a distributed pattern: in 2006 the presence of a supplier which acquired a 47% share, without having previously won any order and without having been able to win any major order since.

This category appears as characterised by a few strategic partnerships and several agile partnerships, where the strategic partners that are collaborating season after season with Company B – with the high-involvement required to develop the soles and to follow the production flow – face relevant fluctuations in the orders they receive.

Table 42 – Company B: synthetic indicators related to non-leather soles purchase

	2012	2011	2010	2009	2008	2007	2006	2005
Share of the largest supplier	29%	31%	24%	26%	29%	24%	47%	19%
Share of the two largest suppliers	48%	53%	44%	46%	49%	48%	65%	32%
Share of the three largest suppliers	58%	64%	59%	66%	65%	70%	76%	44%
Number of suppliers	15	15	15	9	12	11	13	20
N. of new suppliers (share)	4 4%	3 2%	1 0%	2 5%	2 7%	3 4%	4 3%	10 17%
N. "tested" suppliers (share)	2 0%	5 2%	4 1%	1 1%	1 0%	1 0%	1 0%	4 1%
Share of the largest 2012 supplier	29%	9%	15%	19%	13%	2%		
Share of the second largest 2012 supplier	19%	31%	20%	19%	20%	23%	11%	19%
Share of the third largest 2012 supplier	10%	22%	24%	26%	16%	24%	11%	2%

* The yearly share is based on the yearly ranking and the suppliers taken into account might vary from year to year.

6.9.3 Evidence from the longitudinal analysis on purchase orders

The longitudinal analysis on purchase orders confirms the joint presence of "High-Involvement & Long-Term" (HI-LT) and "High-Involvement & Short-Term" (HI-ST) relationships in several key supply categories, mainly external leather and, to a minor extent, non-leather soles. HI-LT relationships are lower in number but higher in terms of purchased volumes with respect to HI-ST relationships, even if some strategic partnerships are related to niche components that are purchased in a stable way from a few selected suppliers (or even from a single supplier), while remaining just a small fraction of the overall spending in the supply category.

The longitudinal analysis suggests that these two footwear companies (A and B) are relying on a few strategic partnerships to acquire the bulk of their component requirements as a way to keep operational risks under control. At the same time they leverage on many agile supply partnerships in order to gain access to a wide variety of components as a way to keep on renewing their collection. It appears that the more a supply category is relevant for the fashion look, the wider the vendor base and the more frequent the agile supply partnerships.

7 AGILE SUPPLY PARTNERSHIPS IN THE MACERATA-FERMO FOOTWEAR DISTRICT (CROSS-CASE ANALYSIS)

7.1 Introduction

This chapter follows a cross-case analysis approach to look into supply partnerships developed by six medium-large footwear companies of the Macerata-Fermo district.

As described in Chapter 6, high-involvement supply relationships appear as a characteristic of the approach of the Macerata-Fermo footwear companies. Given the time pressure in developing and then producing new collections, the role of suppliers is key in their contribution to the strengthening of the novelty of the product design as well as to managing emergencies, with rich and frequent information sharing. Investment sharing is also an approach used by many footwear companies, especially with respect to the assemblers and non-leather soles producers. Most of the supply relationships are managed in an informal way and the use of formal contracts is mainly sought as a requirement for administrative purposes.

The cross-case analysis aims to highlight similarities and differences in the approach to supply partnerships. Section 7.2 reports on the analysis of the characteristics of supply relationships by supply category and identifies how fashion companies manage their supply partnerships. The evidence described will be the basis for answering the first research question:

> RQ 1: How do fashion firms decide on the degree of involvement in supply relationships?

Section 7.3 provides an analysis of the impact of the different agility drivers and agile capabilities on agile supply partnerships, their feasibility and their characteristics. The evidence described in this section will be the basis for answering the second research question:

> RQ 2: How do fashion firms decide on the duration of supply partnerships?

7.2 Analysis of the supply relationships by supply category

Supply relationships are recognised in the literature as very dependent on the characteristics of the supply category (Kraljic, 1983; Olsen and Ellram, 1997; Dyer *et al.*, 1998; Day *et al.*, 2010). Starting from Kraljic (1983), supply relationships are framed within a portfolio approach. Based on industry characteristics and also on product/service characteristics, the buying company is advised to develop a different purchasing strategy, from pure market mechanisms (where there is no relationship) to strategic partnerships (based on a high-involvement and long-term relationship).

The supply relationships in each supply category are analysed based on the Kraljic matrix (Kraljic, 1983), integrated with industry and agility specific variables. At the same time, the evidence will be looked at according to the theoretical frame developed in Chapter 3 on the basis of a systematic literature review: a portfolio approach based on two variables, e.g. the degree of involvement and the length of the relationships.

The supply categories taken into account are three key shoe components – namely external leather, internal leather and sole (leather and non-leather) – and two key services – style and shoes assembly.

7.2.1 Supply relationships with external leather suppliers

External leather is a supply category characterised by high "strategic importance of purchasing" – as the external leather is normally the most costly item in fashion shoes (ranging from 20% up to 40% of the cost of a pair of shoes) – and by high "complexity of the supply market" – as, in the case of unavailability, its replenishment lead-time is the longest among shoes components. Both these characteristics qualify external leather as being a "strategic item" and, according to Kraljic's matrix, the buyer should aim for a long-term partnership.

However, given that most leather suppliers specialise in a few types of leather and the importance external leather has for the look of the shoes, it is risky for a footwear company to establish a long-term partnership with a leather supplier. In a given season what is offered by an established leather supplier may not fit with the fashion trends and the market requirements. Therefore the relationship between footwear companies and

their external leather suppliers appears characterised by a challenging balance between the need for long-term relationships and the need for a seasonal response to changing fashion trends.

From the Macerata-Fermo district selected cases, it appears that the relationships between these companies and their external leather suppliers can be classified as "high-involvement". There is, in general, information sharing both during the development phase and in the production and delivery phase, as well as governance mechanisms being mainly informal. However, there is almost no investment sharing. Table 43 shows the synthesis of the detailed evaluations each company made with respect to supplier involvement in this category.

Table 43 - External leather – Degree of involvement

	Information sharing during collection development	Information sharing during production phase	Investment sharing	Informal governance mechanisms
Nero Giardini	4 = Very relevant	4 = Very relevant	3 = Relevant	3 = Relevant
Alfiere	3 = Relevant	3 = Relevant	1 = None/irrelevant	3 = Relevant
Formentini	4 = Very relevant	4 = Very relevant	1 = None/irrelevant	3 = Relevant
Cesare Paciotti	2 = Limited	4 = Very relevant	1 = None/irrelevant	3 = Relevant
Fabi	4 = Very relevant	4 = Very relevant	1 = None/irrelevant	3 = Relevant
Manas	3 = Relevant	4 = Very relevant	1 = None/irrelevant	3 = Relevant

Supplier involvement scale: 1 = None/irrelevant; 2 = Limited; 3 = Relevant; 4 = Very relevant.

Information sharing during the collection development stage is focused on the testing of the external leather in the making of the prototypes and samples, so as to jointly evaluate the results in terms of look and robustness. Information sharing is classified by most companies as relevant or very relevant even if there is almost no customisation being carried out as a result of a buyer-supplier collaboration. Footwear companies tend

to buy their external leather straight from the standard leather collections of the different suppliers. Formentini represents the main exception as it is working together with its major external leather suppliers in order to reduce costs. Also Nero Giardini and Fabi have developed a strong collaboration with external leather suppliers: the former targeting robustness and fit for use, the latter targeting the creation of an exclusive look.

Information sharing with external leather suppliers during the production phase is considered particularly relevant by all the companies interviewed. The external leather is the material that has the longest production lead-time. Therefore, in the event that the tannery does not have a specific kind of leather in stock, the production of the models using that leather is delayed. This logistic risk is relevant because, with the exception of classic leather in classic colours (i.e. black and dark brown in the autumn/winter collections), the footwear companies try to source precisely the amount of leather required by their original production, so as not to retain any stock at the end of the fashion season. Any change in the production plan – including any product replenishment – is therefore possible only by sourcing additional leather. For this reason, Nero Giardini – a company which relies to a large extent on replenishments during the fashion season – is particularly sensitive to information sharing and collaboration with external leather suppliers. Should there be any lack of communication, their replenishment strategy would be unfeasible.

There is almost no investment sharing between the tanneries and the footwear companies, given that the tanneries are covering, on their own, all the costs required for the development of their leather collection and their production process. The only partial exception is represented by Nero Giardini which is investing, together with a tannery, in international leather sourcing. For the future, Alfiere is considering a possible cooperation with a few leather tanneries to jointly develop a postponement strategy based on a semi-finished leather that might be further processed to offer different finishings and looks. Such collaboration might be very advantageous, both for the tannery and for the footwear company. The former would establish a long-term partnership and secure orders beyond a single fashion season; the latter would simplify its leather inventory and reduce any related risks.

The governance mechanisms are informal, as in the whole of the fashion industry. However, given the nature of the supply, the relationships can be quite controversial. The external leather is a natural product that is subject to shrinkage, based on weather conditions, and to imperfections within a skin and across skins. In particular, Paciotti complains that some leather suppliers take advantage of the legal possibility of supplying leather up to 3% less than the stated surface, given this shrinkage. Such a commercial approach is not only increasing the actual cost of the leather but is also reducing the number of shoes that can be produced from a given leather batch. Such a reduction often cannot be compensated by a new production batch as the footwear companies are always working to tight schedules with respect to the deadlines for delivery to the retailers. Nero Giardini complains about the lack of structured agreements with leather suppliers and highlights that the quality issue can be a problem that needs to be managed. Formentini, to deal with potential controversies, takes a sample of leather, cuts it into two and has each party sign it as a confirmatory sample.

As to the duration of the supply relationships, all the interviewed companies highlight significant fluctuation in the volumes they order from their external leather suppliers. At the very beginning of the development process, the stylists evaluate the proposals of several tanneries and, if they are not satisfied with the collection presented by an existing supplier, will switch to an alternative source. At this stage, the stylists normally involve many leather suppliers (existing as well as new suppliers) in order to have a wide range of alternatives to be presented at the fashion fairs and the following sales campaign. Given the selection process that takes place between the initial wide range of proposals and the models that are actually launched for large-scale production, a significant share of the sample supplies are not included in the final fashion collection. Therefore those leather suppliers, whose models are not selected for production, do not receive further orders beyond the initial “sample” orders. Moreover, the leather purchase contracts cover only a single season and, in most cases, are mainly issued after the footwear company has acquired confirmed orders during the collection sales campaign – Nero Giardini and Paciotti being partial exceptions. Such a buying approach generates significant fluctuations from one season to the next regarding the supplies from each tannery. Table 44 shows the synthesis of the evaluations made by the six companies with respect to supply relationships’ duration.

Table 44 - External leather – Supply relationship duration

	Length of supply relationship	Stability of supply relationship
Nero Giardini	3 = mainly long-term	3 = quite high
Alfiere	2 = mainly short-term	2 = quite low
Formentini	3 = mainly long-term	3 = quite high
Cesare Paciotti	2 = mainly short-term	2 = quite low
Fabi	2 = mainly short-term	2 = quite low
Manas	2 = mainly short-term	2 = quite low

Duration of supply relationship scale: 1 = short-term; 2 = mainly short-term; 3 = mainly long-term; 4 = long-term.

Stability of supply relationship scale: 1 = very low; 2 = quite low; 3 = quite high; 4 = very high.

Nero Giardini and Formentini are the only two companies that manage to balance the orders with their leather suppliers. Nero Giardini includes in its collection many carried-over articles and, with respect to such articles, is able to maintain a quite well balanced workload with most of its leather suppliers. Formentini has established a long-term partnership with two leather suppliers, one for each of the two major leather types they use for their fashion collection: calf and sheep/goat. Whenever there is a new finish or colour relevant for its collection, Formentini pushes its two established suppliers to try and match these requirements and only as a last resort does it introduce a new supplier. Such an approach has allowed Formentini to establish a quite stable cooperation with its existing suppliers. In both cases, Nero Giardini and Formentini are trading-off novelty or uniqueness in favour of reliability and cost competitiveness.

The longitudinal analysis of the supply contracts in Companies A and B confirms the presence of two groups of suppliers: a few leather suppliers that – in spite of yearly fluctuations – maintain a relevant and recurring presence for many years; and, several leather suppliers that receive purchase orders just for one season, sometimes only for the samples. In both Companies A and B, external leather is the supply category where the supply base is the largest among all the key product component categories and where

the number of new suppliers – as well as the number of "sample" suppliers – evaluated every year is the largest. For these two companies, there are, on average, 32 and 12 external leather suppliers per year respectively, more than three times their respective internal leather suppliers. The average number of new suppliers invited every season is respectively 14 and 6, much more than in the case of the internal leather suppliers, where there are on average 5 and 1 new suppliers. The difference is even larger if we consider the number of "sample" suppliers: on average 20 and 4 external leather "sample" suppliers every season versus an average of 3 and 0 internal leather "sample" suppliers.

The characteristics of a supply relationship that is, in most cases, based on a wide portfolio of suppliers that are facing a fluctuating level of orders every season, are confirmed by the interview with Conceria del Chienti, the largest tannery near the Macerata-Fermo footwear district[33]. The company recognises the importance of information sharing; however, it complains that the footwear companies, with the exception of the strongest brands, do not share the production plans early enough. "*The footwear companies just choose from the leather collection samples we have prepared, without giving us much feedback at the beginning of the season. It is not common practice to receive pre-orders and therefore for us it is very difficult to plan based on an overall seasonal target*". Conceria del Chienti confirms the strong interaction that takes place during the production stage. It is under pressure to improve its logistical performance because, with the exception of a few leather types and colours, the footwear companies are ordering the precise amount of their requirements. "*Once, the footwear companies considered leather as a good investment and, when they had cash, they were inclined to stock relevant leather batches. Nowadays the leather stock is close to zero, given the sudden changes in the colours and tones*". Conceria del Chienti also confirms that there is no significant investment sharing and that it plans and funds, on its own, the new models' development as well as the new processes' developments. This lack of investment sharing might be for historical reasons, given that in the past

[33] Conceria del Chienti, established in 1923, is located in Tolentino (40 km from the centre of the footwear district). This company is one of the oldest in Italy and specialises in very high quality leather, mainly from calfskin, young calfskin and aniline goatskin. All the quotes for Conceria del Chienti are taken from an interview with the CEO on February 12th 2013.

tanneries used to be on average much larger and much richer than footwear companies. While confirming informal governance mechanisms, Conceria del Chienti highlights the difficulties it is facing from its side in managing the relationship with footwear companies. Often its customers try to 'cherry pick' their purchases, selecting the skins one by one, and sometimes even cutting out some parts of a skin. The skin is a natural material and therefore a certain degree of variability and imperfection has to be accepted. "*Imperfections are not considered a problem by buyers who have experience in leather cutting. Experience allows them to see how a given imperfection can be managed, for instance by placing it in a part that will be glued on or sewn into the sole. On the other hand, there can be difficult discussions, if the buyer wants to select the leather, i.e. cutting out all the imperfections while maintaining the same price per footage*". Conceria del Chienti's general evaluation confirms the main characteristics highlighted by the footwear companies: a high-involvement relationship with much uncertainty and fluctuations as a result of the ever changing fashion trends. "*They allocate us on certain models and, after, it is like being at a wheel of fortune*".

Based on this evidence, it appears that partnerships with external leather suppliers are characterised by a few long-term agreements and a series of short-term, more volatile relationships. In order to choose the external leather best fitting with seasonal fashion trends, the footwear companies have built up a wide supplier base among which – season by season – they can choose the proposals considered to be more in line with the market requirements.

7.2.2 Supply relationships with internal leather suppliers

Internal leather is a supply category characterised by a low "strategic importance of purchasing" – the cost of internal leather is normally around 4-5% of the overall cost of a pair of shoes – and by a medium-low "complexity of the supply market" – it is quite a commoditised material. Both these characteristics qualify the leather as a "non-critical item" and, according to Kraljic's matrix (Kraljic, 1983), the buyer should aim to reduce the purchase cost by having an efficient purchasing process and by adopting competitive market mechanisms.

Moreover, the internal leather has a very limited impact on the overall look of the shoes and is not sensitive to fashion trends. Therefore, the relationship between the footwear companies and their internal leather suppliers appears characterised by a limited need for involvement and a potentially short time reference for the supply relationships.

It appears that the relationships between the case companies and their internal leather suppliers are, in general, characterised by no information sharing during the development phase, limited information sharing during the production and delivery phase, and no investment sharing. The governance mechanisms are quite informal, as is standard in the fashion industry; however, they are required even less in this supply category. Table 45 shows the synthesis of the detailed evaluations each company made with respect to supplier involvement in this category.

Table 45 - Internal leather – Degree of involvement

	Information sharing during collection development	Information sharing during production phase	Investment sharing	Informal governance mechanisms
Nero Giardini	1 = None/irrelevant	1 = None/irrelevant	1 = None/irrelevant	2 = Limited
Alfiere	1 = None/irrelevant	2 = Limited	1 = None/irrelevant	2 = Limited
Formentini	1 = None/irrelevant	2 = Limited	1 = None/irrelevant	2 = Limited
Cesare Paciotti	1 = None/irrelevant	2 = Limited	1 = None/irrelevant	2 = Limited
Fabi	2 = Limited	2 = Limited	1 = None/irrelevant	2 = Limited
Manas	2 = Limited	2 = Limited	1 = None/irrelevant	2 = Limited

Supplier involvement scale: 1 = None/irrelevant; 2 = Limited; 3 = Relevant; 4 = Very relevant.

Information sharing during the collection development stage is very limited, as the stylists do not rely on differences in the internal leather to characterise their fashion collections. There are just a few exceptions where the internal leather is coloured the same as the soles, in order to give character to the total look of the shoes, as Fabi is doing with sand or violet coloured internal leather in a few of its models. The internal leather collections are more limited and much more stable than the external leather collections and the footwear companies do not need to involve leather suppliers in the development stage.

Information sharing with the internal leather suppliers during the production phase is also quite limited. The internal leather is not considered a risky material and the footwear companies are willing to source it in excess and keep it in stock ready for when it is needed. Companies such as Nero Giardini buy big batches of internal leather when the prices are attractive and store them for future use. Moreover, the same kind of internal leather can be used for different collection lines, balancing the different market trends each of these lines might face.

There is no investment sharing between tanneries and footwear companies, given that the internal leather tanneries are covering on their own all the costs required for the development of their leather collection and for their production process.

The governance mechanisms are informal, as in the whole fashion industry. The requirements are often agreed verbally and only at a later stage formalised in a written contract or material delivery request.

As to the duration of the supply relationships, none of the interviewed companies stresses the importance of establishing long-term relationships with internal leather suppliers. However, some companies, such as Alfiere, highlight the usefulness of having a reliable source so that they do not have to think of this supply category while facing all the other challenges of the collection development. Moreover, the possibility of negotiating competitive prices with existing suppliers often provides limited incentives to look for alternative suppliers. Therefore, many supply relationships with internal leather suppliers tend to be renewed year after year and become long-term. The search for cost reduction – often linked to direct sourcing from Asian suppliers – is the

main driver for renewing the supplier base. Table 46 shows the synthesis of the evaluations made by the six companies with respect to supply relationships duration.

Table 46 - Internal leather – Supply relationship duration

	Length of supply relationship	Stability of supply relationship
Nero Giardini	2 = mainly short-term	2 = quite low
Alfiere	3 = mainly long-term	3 = quite high
Formentini	2 = mainly short-term	3 = quite high
Cesare Paciotti	2 = mainly short-term	2 = quite low
Fabi	2 = mainly short-term	3 = quite high
Manas	2 = mainly short-term	2 = quite low

Duration of supply relationship scale: 1 = short-term; 2 = mainly short-term; 3 = mainly long-term; 4 = long-term.

Stability of supply relationship scale: 1 = very low; 2 = quite low; 3 = quite high; 4 = very high.

The longitudinal analysis of the supply contracts for internal leather in Companies A and B highlights that there are fewer and more concentrated suppliers in comparison with external leather. The leading suppliers often supply more than half (even two-thirds) of the requirements of a given year. The need to simplify the bill of materials across several models, as well as the possibility of negotiating more competitive prices with respect to large supplies, can be the two main reasons for such a sourcing approach.

The characteristics of a supply relationship that becomes long-term, even without developing a high-involvement approach, are well described in the interview with Conceria Tirrena, one of the largest European suppliers of internal leather[34]. Conceria Tirrena offers its customers two main advantages: long payment time and fast delivery.

[34] Conceria Tirrena, established in 1953, offers a wide variety of internal leathers: bovine, pig, goat and sheep. The company sources semi-finished leather and carries out (internally or with the support of specialised subcontractors) only the finishing part of the process. All the quotes for Conceria Tirrena are taken from an interview with the CFO on October 23rd 2012.

Thanks to its financial strength, Conceria Tirrena can offer footwear companies long payment terms (up to six months). The internal leather is generally the first material to be sourced when shoe production is launched and long payment terms allow the footwear company to better manage their cash flow. The CFO of the company reports that "*The footwear companies, before negotiating financial support from the banks, come to us to see our payment terms*". Moreover Conceria Tirrena has very large warehouses (four in total, serving different footwear districts worldwide plus a few Customs warehouses) and can provide most customers' requests directly from stock, avoiding bottlenecks at the very beginning of the fashion season as well as in the replenishment stage. Such an approach avoids the need for information sharing, allowing Conceria Tirrena to comply with customers' requirements at very short notice. There is no shared investment with customers, even if the buyer-seller cooperation could optimise the delivery process and reduce the material handling costs. Conceria Tirrena makes extensive use of IT for the coding and location identification of leather batches and is willing to share this with customers. "*The logistic optimisation based on the use of IT for the material handling – including an eventual double coding of the leather batches – could be the basis for building up strong partnerships with the footwear companies, reducing the handling time from a couple of days down to 10-15 minutes. However, only a few footwear companies are taking advantage of such an opportunity*".

Based on all this evidence it appears that the relationships Macerata-Fermo footwear companies have with their internal leather suppliers can be considered as low-involvement, without the characteristics required for establishing supply partnerships Moreover, given the supply strategy followed by a few of them, often these relationships evolve into "durable, arm's length relationships", featuring at the same time low-involvement and a *de facto* long-term duration.

7.2.3 Supply relationships with soles suppliers

Soles is a supply category characterised by medium-high "strategic importance of purchasing", as soles are normally the second most expensive shoe component after the external leather (their cost ranges around 8-12% of the total cost of a pair of shoes,

depending on their characteristics), and by low "complexity of the supply market", as there are many alternative sources for almost every sole type. These characteristics qualify the soles as being a "leverage item" and, according to Kraljic's matrix (Kraljic, 1983), the buyer should develop a materials management strategy, aimed at increasing the level of competition among the potential suppliers, thus driving down the cost of this component. However, it has to be considered that, while at the beginning of the fashion season the stylists can choose from among several suppliers, in the production launch and the following replenishment stage the footwear company is almost locked-in with the supplier originally selected.

Leather soles have been evaluated very differently by the footwear companies interviewed. They are important, given that they are used in the top range offers where they contribute to the shoes' look and characterisation (as highlighted by Manas), but, at the same time, they have many characteristics of a commodity: they start from widely available raw leather and they are "paid by kilo" (as highlighted by Paciotti). Therefore, the relationships between footwear companies and their leather soles suppliers appear characterised by contrasting evaluations on whether to strengthen existing relationships or to enlarge the supplier base.

The non-leather soles are considered to be rather important for the overall look of the shoes. Different suppliers normally specialise in a specific material and the stylists, in the initial collection development stage, choose a specific material – and therefore target a given subset of soles suppliers – based on the target look and performance. The non-leather soles are moulded with all the customised soles requiring a dedicated investment. Such investment limits the feasibility of a supplier change during the "life" of a given sole model. Therefore, the relationships between footwear companies and their non-leather soles suppliers appear characterised by the desire for consolidating existing relationships (also for prolonging the use of existing customised models) and the need for finding new suppliers for new materials and finishings.

From the case studies it appears that the relationships between these companies and their leather soles suppliers can be classified as "high-involvement", especially with non-leather soles suppliers. There is, in general, good information sharing both during the development phase and during the production and delivery phase as well as informal

governance mechanisms. The investment sharing is mainly related to the purchase of customised moulds.

Table 47 shows the synthesis of the detailed evaluations each company made with respect to supplier involvement in this category, distinguishing between leather and non-leather soles.

Information sharing during the collection development stage is focused on the development of a specific leather for a given product line and includes elements related to both the look and the technical characteristics to be achieved. For instance, the collaboration can be very relevant with respect to women's high heeled shoes, where a fashionable shape should go hand in hand with a solid structure, as well as with respect to rubber soles, in case a complex mix of colours and inserts has to be provided. There is almost no need for information sharing at this stage with respect to those soles that are carried over from one season to the next.

Information sharing with soles suppliers during the production phase is relevant. The suppliers are always kept informed on production progress so that they can readjust with respect to the frequently occurring planning changes. Given that the raw material required for the soles is normally easily available (be it raw leather, rubber or plastic compounds), the soles rarely represent a relevant bottleneck, apart from in the case of mismanagement on the supplier side[35]. For this reason, footwear companies do not tend to plan any alternative scenario for taking into account a soles supplier underperformance as to quality or delivery timing. Eventually they manage such an event as an emergency and then exclude the supplier from the vendor list. Manas represents the exception as it deals, in a formal way, with the soles supplier underperformance scenario, planning for a second source, as a support and stimulus for those suppliers that appear in some way weak in their quality or delivery reliability.

[35] Bottlenecks can occur mainly with respect to small production lots, where the need to cover all the "shoes sizes" can create delay given the set-up times for the "marginal" numbers (the very small and very large sizes).

Table 47 - Soles – Degree of involvement

Leather soles

	Information sharing during collection development	Information sharing during production phase	Investment sharing	Informal governance mechanisms
Nero Giardini	Not coded (no a key category)	Not coded (no a key category)	Not coded (no a key category)	Not coded (no a key category)
Alfiere	Not applicable (no leather soles)	Not applicable (no leather soles)	Not applicable (no leather soles)	Not applicable (no leather soles)
Formentini	Not coded (no a key category)	Not coded (no a key category)	Not coded (no a key category)	Not coded (no a key category)
Cesare Paciotti	3 = Relevant	4 = Very relevant	1 = None/irrelevant	3 = Relevant
Fabi	Not applicable (carried out internally)	Not applicable (carried out internally)	Not applicable (carried out internally)	Not applicable (carried out internally)
Manas	3 = Relevant	3 = Relevant	1 = None/irrelevant	3 = Relevant

Non-leather soles

	Information sharing during collection development	Information sharing during production phase	Investment sharing	Informal governance mechanisms
Nero Giardini	3 = Relevant	4 = Very relevant	2 = Limited (customised moulds)	3 = Relevant (replenishment)
Alfiere	3 = Relevant	3 = Relevant	3 = Relevant (customised moulds)	2 = Limited
Formentini	3 = Relevant	4 = Very relevant	1 = None/irrelevant	3 = Relevant
Cesare Paciotti	3 = Relevant	4 = Very relevant	1 = None/irrelevant	3 = Relevant
Fabi	3 = Relevant	4 = Very relevant	1 = None/irrelevant	3 = Relevant
Manas	3 = Relevant	4 = Very relevant	2 = Limited (customised moulds)	3 = Relevant

Supplier involvement scale: 1 = None/irrelevant; 2 = Limited; 3 = Relevant; 4 = Very relevant.

The only relevant investment sharing that takes place between the soles producers and the footwear companies is related to the moulds required for the customised soles. Such investments are either fully covered at the beginning by the footwear company, that becomes the owner of the moulds (as Formentini and Paciotti do), or are depreciated gradually during the production of those specific soles.

The governance mechanisms are informal, as is the norm in the fashion industry. The required specifications are clearly defined and kept fixed for the fashion season. However, there are many changes in terms of overall quantities and delivery dates.

As to the duration of the supply relationships, all the companies highlight that long-term relationships are able to support a more effective collaboration – as is required by the very tight schedules of the new collection development and launch. However, the relevance of the soles for the fashion look often interferes with such a desire for long-term relationships. The footwear companies know the characteristics of each soles producer in their vendor list and they involve each producer in the collection according to its specialisation. The order volumes assigned to each soles supplier are therefore strongly influenced by fashion trends, similarly to what happens with the external leather. However, the purchase orders for the soles tend to be more stable with respect to those for the external leather, as a given sole can be applied to different models in a particular fashion line. Moreover, the same soles supplier is normally involved in several lines and models, balancing among those models that are performing well during the sales campaign and those models that are not selected for large-scale production.

Table 48 shows the synthesis of the evaluations made by the six companies with respect to supply relationships duration. It appears that there are no major differences in this overall evaluation across the different companies and between the leather and non-leather soles suppliers.

Table 48 - Soles – Supply relationships duration

	Length of the supply relationship	Stability of the supply relationship
Nero Giardini	3 = mainly long-term	3 = quite high
Alfiere	3 = mainly long-term	3 = quite high
Formentini	3 = mainly long-term	3 = quite high
Cesare Paciotti	3 = mainly long-term	2 = quite low
Fabi	3 = mainly long-term	3 = quite high
Manas	3 = mainly long-term	2 = quite low

Duration of supply relationship scale: 1 = short-term; 2 = mainly short-term; 3 = mainly long-term; 4 = long-term.

Stability of supply relationship scale: 1 = very low; 2 = quite low; 3 = quite high; 4 = very high.

The longitudinal analysis of the supply contracts in Companies A and B highlights the presence of two groups of suppliers: a few soles suppliers that – in spite of yearly fluctuations – have a relevant and recurring presence for many years; and, several soles suppliers that receive spot contracts – although sometimes only for the samples. The degree of concentration is much higher than in the case of external leather, but it has been decreasing in the period taken into account, given that these two companies are enlarging their collection portfolio and therefore are requiring more and different specialised suppliers. Company A enlarged its supplier base in 2011 moving from 6 up to 14 suppliers in the non-leather soles category. Company B enlarged its supplier base in 2010 moving from 9 up to 15 new suppliers. In the past three years these companies have had, on average, 10 and 15 non-leather soles suppliers respectively, with roughly half of these soles manufacturers supplying only at the prototyping and sampling stages as their models do not reach the actual production stage.

The characteristics of strategic partnerships that appear to qualify most of the supply relationships with soles suppliers are confirmed by the interviews with two leading soles suppliers: Suolificio Del Papa (for leather soles) and Finproject (for non-leather

soles). They are both in the high end in their supply category and are chosen by customers for their competence and innovativeness.

Suolificio Del Papa is a quite small but very renowned leather sole manufacturer in the Macerata-Fermo footwear district[36]. The company highlights the relevance of information sharing with their customers in the initial design phase, given that they receive an initial idea and are required to develop the component accordingly. As they are involved for the most distinctive and innovative soles, the information exchange is particularly intense. The information exchange during the production phase is mainly related to the need for replanning the production schedules. There are no shared investments and the customers choose Suolificio Del Papa because the company has invested in specific production processes. The governance mechanisms are very informal and the rather small size of Suolificio Del Papa allows a very flexible approach.

Finproject is a leading European soles manufacturer specialising in ethylene vinyl acetate (EVA) soles[37]. The company is currently targeting a limited number of customers in each country and is actively trying to establish long-term relationships with them through a high level of service both in the design and delivery stages. "*We are focused on lightness and we work for a limited number of customers with whom we have developed a long-term relationship. The collaboration starts from the design stage, when we receive the ideas from our customers and we transform them into a product, innovating the design according to their briefings and managing all the technical complexities of EVA.*"

[36] Suolificio Del Papa is targeting the top of the range leather soles offering with very specific processing, from the washing or spraying to the use of wooden nails. Their soles can cost a footwear company up to €40 pair (20 times the average price of a sole) and they are mainly used on shoes whose retail price ranges from €500 up to €1,500. All the quotes for Suolificio Del Papa are taken from an interview with the owner on May 29th 2013.

[37] Finproject is a worldwide leader in EVA moulding. The company supplies very light soles (branded as "Extra-Light") to top fashion brands, from Ferragamo to Prada, from Camper to Hugo Boss. Finproject used to supply quite a wide offering of soles in different materials (including leather soles) but over the past five years it has progressively focused only on EVA, a material for which it has unique competences and owns process patents. All the quotes for Finproject are taken from an interview with the Commercial Director on October 22nd 2012.

The collaboration is also very strong during the production stage. Often Finproject decides to start some production batches before having received a firm customer order. This is done for a few standard articles as well as for a few customised soles of very important customers. Such a collaboration helps the Finproject to distribute the production for a given fashion season over a longer period, at the same time reducing the peaks and limiting the idle times. Such a cost advantage is shared with the customers and the customers also have the advantage of the immediate availability of those sole models. The collaboration with the footwear companies also takes place in terms of developing a global production base, with plants located not only in Italy but also in Romania, India and Mexico, and with a manufacturing agreement in China. In this way Finproject can follow the offshoring strategy some of its customers are pursuing. Finproject invests on its own in the development of a seasonal collection of soles that interprets the fashion trends and can represent a basis for most of the customisations the company will then develop for its customers. The only case of shared investment is related to the moulds, when moulds are targeted to produce customised soles, with an exclusive design and often including the footwear company's logo. Such shared investments represent a strong incentive for buyers to use at least part of the existing sole moulds the following year in their new fashion collection, without the need for making a new investment, and they naturally support the development of long-term relationships. The governance mechanisms are quite informal, even if the production targets of a given fashion season are defined in advance. The only formal contracts are with respect to a few German or Swiss footwear companies but, also in these cases, they are quite generic and focused on obligations related to intellectual property rights or ethical behaviours, without detailing the specific supply of a given fashion season.

Based on this evidence, it appears that the most important relationships with soles producers can be classified as high-involvement and long-term relationships. The need for a wide variety of soles can, in most cases, be obtained by leveraging on existing suppliers and the possibility of carrying over a given sole into the following season is carefully considered to avoid additional investments. There are, however, a few high-involvement and short-term relationships. Strategic partnerships are used for the mainstream of the collection, to develop a cooperation that might contribute to

increased reliability and responsiveness, given that many processes and steps are informal and can be fine-tuned only with mutual experience. Agile supply partnerships are used to widen the collection portfolio to new materials and new processes.

7.2.4 Supply relationships with footwear stylists

Stylistic services are characterised by a medium-low "strategic importance of purchasing", as these services have a quite limited impact on the final cost of the shoes, and by high "complexity of the supply market", as the service offered by the stylist is quite unique and once chosen at the beginning of the season it will shape, to a significant extent, all the fashion collection designed by him/her. These characteristics qualify the services of the stylists as being a "bottleneck item" and, according to Kraljic's matrix (Kraljic, 1983), the buyer should develop a sourcing management, widening the potential suppliers in order to avoid problems.

The effectiveness of the proposal from the stylists is very much influenced by their knowledge of the company's brand identity and its way of working. It is recognised by all the interviewed companies that it takes at least 3-4 seasons before a stylist fully understands the company and *vice versa*. Moreover, given that the "touch" of the stylist has a major impact on the look of the shoes, companies do not want to change their stylists often in order to maintain a style that, in spite of its changes related to the fashion trends, remains characteristic and is recognised by customers. Therefore, the relationships between footwear companies and their stylist appear to be characterised by a long-term horizon. Up to a few years ago, contracts with stylists had a duration of at least two or three years. Nowadays, even though a long-term duration is still considered very important, most of these contracts are lasting for just one or two seasons. Moreover, the long-term relationship may also be affected by the fact that several companies are relying on multiple stylists, assigning to each of them a part of their collection portfolio, so as to widen and differentiate their offer in the market.

From the case studies, it appears that the relationships between companies and their stylists can be classified as "high-involvement". There is very deep and continuous information sharing during the development phase, often with peaks of continuous physical proximity, i.e. the stylist working at the company premises for the period of the

collection development. During the production and delivery phase there are very few interactions, although eventually stylists might be contacted to discuss issues to be improved for the next collection. Informal governance mechanisms are widely used, given that the effort required to stylist is difficult to be specified. However, some companies are defining precise clauses of compensation relating them to the actual sales of the collection developed by the stylist. There is no investment sharing with the stylist because the investments in a stylistic service provider are very personal, related to travel, magazines and eventually design objects from different industries (such as glassware). There is only one case of a shared investment: Nero Giardini is supporting a stylist who is travelling across China in order to analyse the Chinese market and then develop a collection specifically targeting such a market. Table 49 shows the synthesis of the detailed evaluations each company made with respect to supplier involvement in this category.

Table 49 – Stylists – Degree of involvement

	Information sharing during collection development	Information sharing during production phase	Investment sharing	Informal governance mechanisms
Nero Giardini	4 = Very relevant	2 = Limited	2 = Limited	2 = Limited
Alfiere	4 = Very relevant	2 = Limited	1 = None/irrelevant	3 = Relevant
Formentini	4 = Very relevant	2 = Limited	1 = None/irrelevant	3 = Relevant
Cesare Paciotti	Not applicable (carried out internally)	Not applicable (carried out internally)	Not applicable (carried out internally)	Not applicable (carried out internally)
Fabi	Not applicable (carried out internally)	Not applicable (carried out internally)	Not applicable (carried out internally)	Not applicable (carried out internally)
Manas	4 = Very relevant	2 = Limited	1 = None/irrelevant	3 = Relevant

Supplier involvement scale: 1 = None/irrelevant; 2 = Limited; 3 = Relevant; 4 = Very relevant.

As to the duration of the supply relationships, almost all the companies taking part in the research highlighted that long-term relationships are required as the two parties need to find a deep mutual understanding. The stylistic services are critical, for their impact

on the fashion look of the collection and for the secrecy of the information handled, that several companies do not outsource them, but have developed internally their own style department. The only partial exception to a long-term view of the relationships with the stylists is represented by Manas, which underlines the need to change its stylists periodically. This applies not only to special circumstances – such as the major market repositioning Manas carried out in 2007 – but also to the ongoing normal development collection. Manas has established a collaboration with 5-6 stylists, each one focused on a different product line. Every season each of them is offered more or less work based on his/her past performance and the characteristics of the collection the company wants to market in the forthcoming season. On the opposite side, Nero Giardini stresses the relevance of maintaining very long relationships, both for maintaining the stability of the brand positioning in the market and for involving the stylist in the improvement of the carried-over articles, as to the comfort of the shoes and the industrialisation of the process. Table 50 shows the synthesis of the evaluations made by the six companies with respect to supply relationships duration.

Table 50 - Stylists – Supply relationships duration

	Length of the supply relationship	Stability of the supply relationship
Nero Giardini	4 = long-term	4 = very high
Alfiere	4 = long-term	3 = quite high
Formentini	4 = long-term	4 = very high
Cesare Paciotti	Not applicable (carried out internally)	Not applicable (carried out internally)
Fabi	Not applicable (carried out internally)	Not applicable (carried out internally)
Manas	3 = mainly long-term	3 = quite high

Duration of supply relationship scale: 1 = short-term; 2 = mainly short-term; 3 = mainly long-term; 4 = long-term.

Stability of supply relationship scale: 1 = very low; 2 = quite low; 3 = quite high; 4 = very high.

The characteristics of strategic partnerships that appear to qualify most of the supply relationships with stylists are confirmed by the interviews both with Pezzola and Cesetti, two leading stylistic service providers from the Macerata-Fermo footwear district.

Pezzola confirms the stylistic development of a footwear collection requires strong information sharing between the stylist and the footwear company[38]. "*Today the stylistic choices are very much related to commercial targets. They are no longer 'pure creativity' and therefore there has to be a much greater sharing*". The interaction takes place through several meetings in which different company departments and different sales agents are involved. Many viewpoints are taken into account with the goal of developing a collection that is likely to sell well. However, the development of a new collection also requires input outside the company – the market, the people in the street, the new shows on TV, the celebrities. Therefore, the information exchange has to define the overall targets at the beginning but it never has to follow each step of the creative development. "*I have some stylists in my company that I'm not fully involving in the meeting with the footwear company, because if they listen to what the sales agents say, they will not be creative any longer! The commercial department and the sales agents present what they have already seen in the shops, but we need to look at the following year*". Pezzola recognises that mutual understanding and mutual trust are two fundamental pillars that allow the stylist service provider and the footwear company to work effectively together.

Cesetti confirms the strong collaboration that has to be established with the footwear company[39]. The information sharing starts with understanding the DNA of the brand, the basic values and images that the brand aims to convey. "*With respect to the brand, we develop the 'mood', the feeling for the new season ... For instance, with respect to the ongoing world crisis there are two possible moods: either we all wear black as we all are sad or, at the opposite end, to react to the crisis positively, we wear colourful garments*". The guidelines for the development of the new collection are partially acquired from the changes in society (including magazines and music) and partially

[38] All the quotes for Pezzola are taken from an interview with the owner on November 27th 2012.
[39] All the quotes for Cesetti are taken from an interview with the owner on February 12st 2013.

from the inputs from footwear companies. The collection is finalised based on detailed information received from the footwear company, starting from the sell in and sell out data from the previous seasons. Cesetti, however, highlights that all this data might end up reducing the degree of creativity of the stylist. "*We are full of company data and, when we present the first draft of a new collection, someone from the footwear company often says 'look this colour has sold very well, why are you now proposing it in a different colour?' or 'We have sold a lot of this item, let's make it again'. At this point I'm tempted to say 'Sorry, then why are you asking me, and not your accounting department, to develop the collection?' Our key capability is presenting something new!*" The collaboration with a footwear company needs to be developed in the long-term in order to allow a mutual understanding; however, Cesetti highlights that the contracts signed by the stylistic service providers are becoming shorter. "*Before the crisis of 2008, the contracts had at least a three year duration and they were renewed for three year periods. Nowadays most of the contracts are signed for just one year and then they are renewed annually*". Such a shortening of the collaboration horizon, even if it does not preclude very long-term relationships, is putting more pressure on the short-term results and reducing the 'lightness' and freedom with which the stylist is carrying out his/her work.

Based on all this evidence, it appears that the relationships these companies have with their external stylists are "strategic partnerships", with high-involvement and a long-term time reference. The key challenge in these relationships is fully related to the fashion look: a difficult balance between creativity and freedom for the stylist on the one side, and commercial appeal and results on the other.

7.2.5 Supply relationships with shoes assemblers

Shoes assembly is a supply category characterised by the high "strategic importance of purchasing", as this service is normally the second highest cost item after the external leather (ranging from 10% up to 20% of the cost of a pair of shoes), and by high "complexity of the supply market", as the activity carried out by shoes assemblers is quite complex and often not well defined, given that the footwear models are often not fully industrialised when they are passed to the assembly line. Moreover, the production

orders, once assigned at the beginning of a season, are difficult to be diverted to alternative suppliers. Any change during the peak period of the fashion season is also made difficult by the fact that the new assembler would have to structure the production and would be likely to face a partial unavailability of production capacity. Both these characteristics qualify shoes assembly as being a "strategic item" and, according to Kraljic's matrix (Kraljic, 1983), the buyer should aim for a long-term partnership.

Given that most assemblers are specialised, but their specialisation is quite broad and relates to a particular kind of shoe and/or processing, the choice of shoes assemblers is not subject to the impact of fashion trends, as a footwear company will tend to stick to its positioning in a given product category (i.e. women's shoes with high heels, comfort, or sporty men's shoes).

From the case studies, it appears that the relationships between the footwear companies and their assemblers can be classified as "high-involvement". There is, in general, good information sharing during the development phase, for the initial fine-tuning of the production as it emerges from the work on the collection samples. There is very frequent and deep information sharing during the production and delivery phase, as most of the production collection is new every season and the industrialisation of the new models is mainly carried out directly on the production line. Moreover, there is continuous information sharing at the operational level because production plans are frequently changed, mainly due to a lack of components, which calls for mutually agreed readjustments. Given the lack of formalisation regarding important aspects of the shoes industrialisation process, as well as of the production replanning, informal fine-tuning is critical. As Paciotti highlights "*When a supplier knows you, he also knows your defects and helps you in solving your problems*". All the companies highlight that their relationship with the shoes assemblers has to be ruled by informal governance mechanisms. The footwear companies, while expecting their assemblers to be very responsive to any production change taking place during the season, are not able to take into account all the possible changes in specific contract clauses. The footwear companies often commit to relevant investment aimed at supporting the development of the shoes assembler. This investment sharing is mainly related to dedicated equipment the assembler might need or to IT equipment that might interface with the information

system of the footwear company. Table 51 shows the synthesis of the detailed evaluations each company made with respect to supplier involvement in this category.

Table 51 - Shoes assembler – Degree of involvement

	Information sharing during collection development	Information sharing during production phase	Investment sharing	Informal governance mechanisms
Nero Giardini	3 = Relevant	4 = Very relevant	4 = Very relevant	4 = Very relevant
Alfiere	3 = Relevant	4 = Very relevant	4 = Very relevant	4 = Very relevant
Formentini	3 = Relevant	4 = Very relevant	2 = Limited	4 = Very relevant
Cesare Paciotti	Not applicable (prototypes and samples done internally)	4 = Very relevant	2 = Limited	3 = Relevant
Fabi	Not applicable (carried out internally)	Not applicable (carried out internally)	Not applicable (carried out internally)	Not applicable (carried out internally)
Manas *	Not applicable (prototypes and samples done internally)	4 = Very relevant	4 = Very relevant	4 = Very relevant

Supplier involvement scale: 1 = None/irrelevant; 2 = Limited; 3 = Relevant; 4 = Very relevant

As to the duration of the supply relationship, all the interviewed companies highlight that long-term relationships are able to support a more effective collaboration as being required by the need to find a deep mutual understanding. These relationships are, on average, the most long-lasting, where the value of the cumulative experience is perceived to be higher. The most in-depth relationships are developed with those assemblers that are manufacturing the prototypes and the samples. These initial activities are considered critical for the success of the collection launch both in respect of the timing and in terms of the level of secrecy they require. For these reasons such activities are either assigned to long-term partners or are carried out in-house. Nero Giardini is the leading example of an approach aimed at building up long-term partnerships: the company CEO reports that in more than 25 years of activity he has dismissed only two of the assemblers he started working with. In the case of Nero Giardini, the stability in the relationships with the shoes assemblers is supported by the fact that the company has a significant amount of carried-over items that can be planned

in a more reliable way at the beginning of the fashion season. A long-term partnership reference frame also applies to the production that is offshored. District-companies find it difficult to select a good partner abroad and recognise a lot of time, effort and investment are required to develop an effective way of working together. Therefore, once they have made an investment in a given country/area and in a few selected suppliers, they tend to stick with them as long as the supplier remains competitive in terms of quality/cost ratio. This approach also holds for companies that are offshoring nearby the less value-added activities (as Formentini does for part of the cutting and sewing activities) as well as for companies that have offshored, even offshored far way, almost all production activities (as in the case of Alfiere). Table 52 shows the synthesis of the evaluations made by the six companies with respect to supply relationships duration.

Table 52 - Shoes assembler – Supply relationships duration

	Length of the supply relationship	Stability of the supply relationship
Nero Giardini	4 = long-term	4 = very high
Alfiere	4 = long-term	3 = quite high
Formentini	4 = long-term	4 = very high
Cesare Paciotti	4 = long-term	4 = very high
Fabi	Not applicable (carried out internally)	Not applicable (carried out internally)
Manas	4 = long-term	4 = very high

Duration of supply relationship scale: 1 = short-term; 2 = mainly short-term; 3 = mainly long-term; 4 = long-term.

Stability of supply relationship scale: 1 = very low; 2 = quite low; 3 = quite high; 4 = very high.

The characteristics of strategic partnerships that appear to qualify most of the supply relationships with shoes assemblers are confirmed by the interviews with Bait and Exa, two large shoes assembler of the Macerata-Fermo footwear district. These two companies are positioned very differently: Bait is a shoes assembler that used to

produce shoes under its own brand and has all the capabilities to fully develop, industrialise and manufacture a shoe collection; Exa is a pure shoes assembler. Moreover while Bait is serving multiple customers, Exa has just a single customer.

Bait highlights the frequent and deep information sharing that has to take place during the initial phases of the collection development process[40]. The experience of the shoes assembler is very useful to the footwear company in order to identify solutions that can simultaneously produce a good look and reduce costs. For instance, the shoes assembler might propose the use of shapes and models already available at its premises. These shapes and models are already tested as to their fit for use and do not require any further investment. Sometimes the footwear company – also for saving development time – might decide to follow the proposal of the shoes assembler and rely on those already existing pieces. The collaboration with the customer is even greater when the shoes assembler is interfacing with a 'total look fashion brand' that does not have a historical presence in the footwear industry but that is adding the footwear collection to fully exploit its brand. "*In these cases, the customer comes with ideas, and sometimes even with photos of the model they are developing, giving a general input ... we develop a proposal for their footwear collection and then we interface with their stylist, and suggest materials and component suppliers to them*". A trust relationship is very important, especially when the shoes assembler is also involved in the prototyping phase, a phase where the assembler is investing together with the footwear company. "*The development of prototypes and samples is not always followed by a large-scale production. There are cases when the footwear company, once the new collection has been developed, moves the production offshore*", leaving the local company without the expected return from the final production phase. Leaving aside these cases of misbehaviour, most of the relationships are based on informal agreements. However, such a widely adopted approach, "*where the footwear company does not want to have its hands tied*" even if the collaboration is renewed regularly season after season, can create problems in the present credit crunch situation, as several small-medium assemblers are having trouble obtaining a bank loan for running their business.

[40] All the quotes for Bait are taken from an interview with the owner on March 21st 2013.

Exa highlights the continuous exchange of information that needs to take place during the production stage, starting from the launch of the initial lot[41]. "*The prototype is developed by [the footwear company], but then a test of the model is carried out, together with them, on our assembly lines*". The collaboration then continues for the whole season. "*We receive an overall production plan so that we organise all the activities. However, during the delivery period we receive several emergencies that we are asked to satisfy the same day. For instance, [for the autumn/winter collection] we produce for the stock from April till the end of June. The urgencies take place in July, August and September when [the footwear company] delivers to its retailers*". The coordination with the footwear company is supported by a dedicated IT link. "*We have direct access to their server and every evening we report the production progress to them*". The shoes assembler receives from the footwear company all the components, including the leather cut and sewed. However, according to an informal agreement, the assembler has to keep control over the overall component stock and has to actively contact the upstream suppliers in case their stock appears insufficient to cover the production target of the following days. The footwear company has often intervened in supporting Exa regarding the upgrade of its information system as well as with the purchase of equipment required for some special new process.

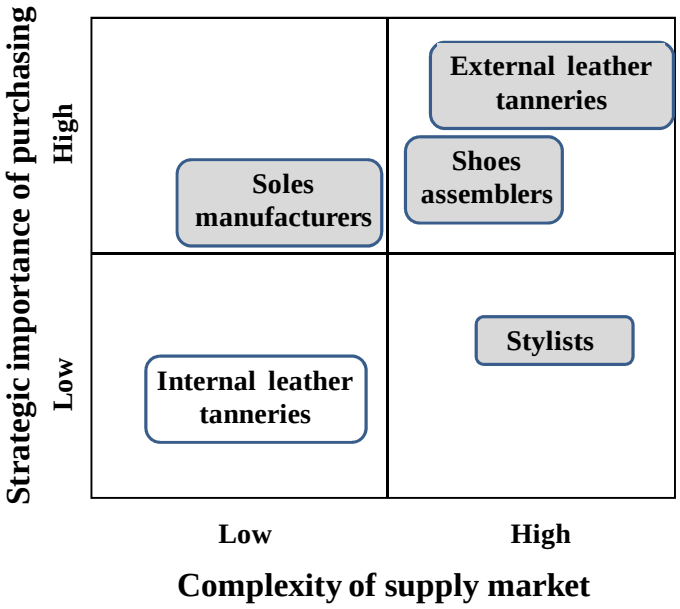
Based on all this evidence, it appears that the relationships these companies have with their shoes assemblers are "strategic partnerships", with high-involvement and long-term duration. The strength of the relationships with the shoes assemblers is considered by several footwear companies as even more involving than the one they have with their stylists. The degree of involvement is considered higher as, while characteristically the stylist needs to maintain degrees of freedom for preserving his/her creativity, the cooperation with the shoes assembler must be complete in every detail. Moreover, while some footwear companies believe that after several years a stylist needs to be changed so as to offer a new look, the shoes assembler can follow the company over a very long period, as long as it is able to extend its capabilities in line with the market requirements.

[41] All the quotes for Exa are taken from an interview with the owner on March 21st 2013.

7.2.6 The impact of the supply category characteristics on supply relationships

The analysis carried out with respect to the different supply categories responds to the first research question, highlighting that Macerata-Fermo district companies develop a wide portfolio of supply relationships. It appears that these companies are developing supply partnerships even in supply categories that would not fit with the Kraljic matrix requirements of "High strategic importance of purchasing" and "High complexity of supply market" (Kraljic, 1983). The footwear companies analysed develop supply partnerships with their external leather suppliers and shoes assemblers – two supply categories considered to be "strategic items" according to the Kraljic matrix and therefore to be developed as partnerships. However, the presence of industry specific agility variables – e.g. relevance for the fashion look and degree of required customisation – bring these footwear companies to develop supply partnerships with their soles suppliers (considered by the Kraljic matrix as "leverage items") as well as with their stylists (considered by the Kraljic matrix as "bottleneck items") (Figure 14).

Figure 14 - Classification of the supply categories according to the Kraljic matrix



Key:

	High-involvement relationships, e.g. supply partnerships
	Low-involvement relationships

The soles (especially the non-leather soles), while easily available on the market as standard components, are often customised in their design so as to fully exploit their impact on the fashion look of the shoes. The sole supplier that is developing such customisation and then is managing all the production is highly involved by the footwear companies in the whole collection development process and is fully consider to be a partner.

The style services, while not very expensive in terms of percentage of the total cost of the shoes, are critical for the fashion look and therefore for the success of the seasonal collection as well as for establishing the positioning of the brand. Such relevance, within the season and across different seasons, pushes the footwear companies towards the development of supply partnerships.

Moreover, the secrecy that characterises the collection development up to the presentation at the fashion fairs creates a further incentive to develop partnerships with all the suppliers that are strongly involved in the collection development, especially those that are involved in the early stage of the prototyping, almost irrespectively of where in the Kraljic matrix they are positioned.

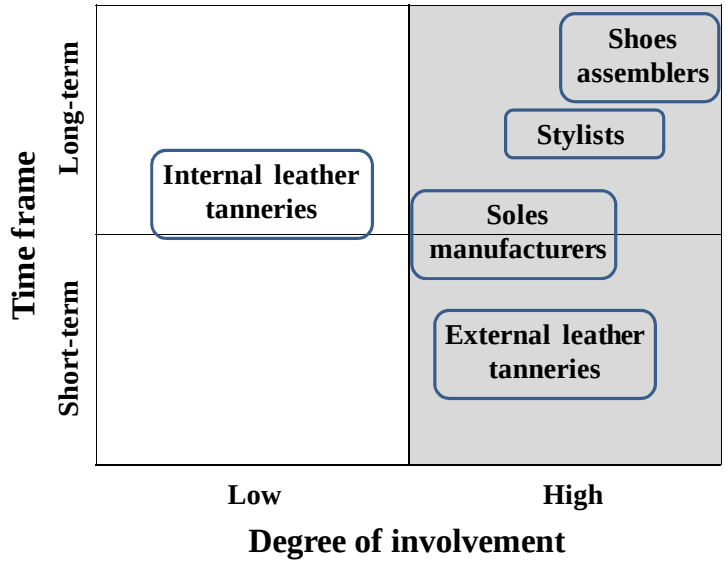
The analysis of the supply categories by the duration of the supply relationships is also useful for paving the way for responding to the second research question (Figure 15).

It appears the footwear companies are inclined to develop agile supply partnerships (high-involvement and short-term) mainly with their external leather suppliers and, to a more limited extent, with the soles suppliers.

Their relationships with the stylists and, even more, with the final assemblers are strongly based on long-term partnerships. The time compression diseconomies and the losses from the relational benefits appear too high to balance the advantages from an increase in the degrees of freedom from agile supply relationships.

The internal leather suppliers are managed to a large extent through durable arm's length relationships. It appears that this supply category is not suitable for developing supply partnerships.

Figure 15 - Classification of the supply categories according to degree of involvement and duration of the supply relationship



Key:

	High-involvement relationships, e.g. supply partnerships
	Low-involvement relationships

7.3 Analysis of agile supply partnerships by agility profile

The previous analysis focused on the characteristics of the partnerships in different supply categories without taking into account the agility approach developed by each company. To answer the second research question, this section analyses whether and why different approaches to agility lead footwear companies to manage their supply partnerships differently.

From the exploratory survey presented in Chapter 5, three different clusters of companies are identified. In each of these clusters at least one case is analysed. Namely:

- Nero Giardini is taken as an exemplar of footwear companies where ASPs are expected not to be relevant;
- Alfiere and Formentini are taken as exemplars of footwear companies where ASPs are expected to be relevant but not likely;
- Cesare Paciotti, Fabi and Manas are taken as exemplars of footwear companies where ASPs are expected to be relevant and likely.

7.3.1 Agility profile where ASPs are expected not to be relevant

Nero Giardini has been selected for representing those footwear companies for which ASPs are expected not to be relevant as they are facing agility drivers mainly related to a low-turbulence scenario. From the theoretical framework on agility, low-turbulence agility drivers favour strategic partnerships more than ASPs, given that the capabilities and competences of the existing supply network are stressed but not challenged in terms of novelty and innovation.

Nero Giardini approaches agility mainly in terms of responsiveness to replenishment orders during the fashion season while the company is not targeting to renew a large share of its seasonal collection. Therefore it is an approach where agility is mainly related to facing demand uncertainty on quantity and variety.

Nero Giardini strives for a stable supply network characterised by a smooth entry process, gradually moving from a trial supply up to the assignment of significant production orders[42]. The stability of the supply network is important, as Nero Giardini needs suppliers that are willing and able to deliver within a very short lead-time to allow its fast replenishment strategy. Moreover, Nero Giardini asks each supplier to keep in stock at least 10% of the materials and to eventually provide additional material to Nero Giardini during a peak period on top of production already scheduled. Such prerequisites limit the range of potential suppliers and favour the incumbent suppliers. The stability of the supply network is even more important when considering that all these requirements are not formally written down in a contract, but are informally managed.

This approach applies very much to the non-leather soles where Nero Giardini is relying on a few suppliers, mainly one (or eventually two) for each of the major types of soles. Nero Giardini a few years ago decided to widen its non-leather supplier base and followed for each of the new materials chosen a filtering process aimed to identify qualified long-term partners.

[42] Nero Giardini, besides replenishment, is also giving emphasis to the reliability of the quality offered. Also from this perspective, the company prefers to deal with a stable and reliable supply network.

This approach also applies to the external leather, even if such a supply category is characterised by a wide supply base and there is also a large number of short-term relationships. The bulk of the external leather purchases comes from established partnerships and the new suppliers are not used for the core products but only for a collection extension. The new suppliers have to be tested on a small scale and then progressively, and if they are performing according the company requirements, they can acquire a larger share of the supplies.

The evidence from the Nero Giardini case supports the following proposition: *Fashion companies facing low-turbulence tend to consider only strategic supply partnerships, neglecting agile supply partnerships.*

7.3.2 Agility profile where ASPs are expected to be relevant but not likely

Alfiere and Formentini represented those footwear companies for which ASPs are expected to be relevant – as they are facing agility drivers mainly related to a high-turbulence scenario – but not likely – as they have not developed strong agile capabilities and appears to consider other strategic priorities more important than agility. From the theoretical framework on agility, high-turbulence agility drivers favour ASPs, given that the capabilities and competences of the existing supply network are challenged in terms of novelty and innovation. However, the fact that the company is trading-off agility versus other strategic priorities, such as cost reduction, is reducing the likelihood of ASPs, given that strategic partnerships are better able to support efficient processes.

Alfiere's and Formentini's approach to agility is mainly in terms of a high and medium-high collection renewal rate, while these companies are not targeting responsiveness to replenishment orders. Therefore, their approach to agility is mainly driven by the need to face a relatively high degree of turbulence, with a need to revise to a large extent their collection offer every season. At the same time, because their collections are positioned in the medium-low price range, these companies have a need to leverage their supply network to keep costs down. With such a target, Alfiere has offshored almost all its production activities (excluding the prototype and sample production) while Formentini

is pressing all its supply network, both its local supply network and its offshored suppliers, to keep costs down.

Alfiere, while it develops in the District all the samples and prototypes for its fashion collections, manufactures its shoes through a network of suppliers in Romania (where Alfiere is producing the new models for season) and India (where Alfiere is producing the carried-over items from the previous season). Given that the identification of reliable partners takes significant time and effort, the decision to offshore tends to limit the feasibility of short-term partnerships and favours long-term relationships. In India, considering the difficulties of managing the production process in an offshore location, Alfiere is building up a structured and long-term presence in the country through a joint venture with an Indian entrepreneur and has started sourcing leather locally. The emphasis with the Indian suppliers, including the leather suppliers, is on consolidating relationships so as to improve standards and fine-tune the processes; also, the fact that Indian suppliers are required to work mainly on carried-over models favours stability. In Romania, even if the shorter distance allows easier management of the supply network, Alfiere is striving towards stabilising its supply network, including its component suppliers, especially those which started to manufacture in Romania and therefore can provide to its Romanian assemblers 'local' components at a lower cost and with a shorter lead-time. In spite of such a strong drive towards cost and offshoring, in the past three years Alfiere has developed many ASPs especially regarding its external leather supplies. Such a choice has been explained by the company as a decision to grow and establish a stronger market presence through an increased variety of materials and colours in its collections, with the need to enlarge the supply base, and it has leveraged mainly on the supply network to obtain a wide choice. However, now the company is trying to reduce such a variety, given that it is very expensive and it harms its cost competitiveness. Its goal is to cooperate more with fewer suppliers and develop components able to be configured for a wider range of models (as in the case of a semi-finished leather that could be configured in a wide range of colours and finishings). Such a reorientation is pushing the company to go back to a prevalence of strategic supply partnerships.

Formentini has offshored only a small part of its production activities and therefore it needs to cooperate much more with its local supply network to obtain low cost components and low cost processes. For this reason Formentini, while following the fashion trends very carefully, whenever there is a new material, finish or colour relevant to its collection, pushes its existing suppliers to try and match it. Only as a last resort will the company introduce a new supplier. The company has, over the years, developed a supply network able to cover a wide range of materials and processes. For each specialisation the company relies on a leading supplier which, on the one side, has developed a deep understanding of the way Formentini works so is able to effectively cooperate with the company and, on the other side, has a strong economic incentive not to lose its customer. A long-term collaboration appears beneficial to both sides and, even if such an approach might preclude the involvement of many new innovative suppliers, the prices target imposed on Formentini by the large retailers do not allow the company to pursue stylistic innovation irrespective of its cost impacts.

The evidence from the Alfiere and Formentini cases supports the following proposition: *Fashion companies that face high-turbulence but do not have agility as a strategic priority, tend to favour strategic supply partnerships over agile supply partnerships.*

7.3.3 Agility profile where ASPs are expected to be relevant and likely

Cesare Paciotti, Fabi and Manas have been selected for representing those footwear companies for which ASPs are expected to be relevant – as they are facing agility drivers mainly related to a high-turbulence scenario – and likely – as they have developed strong agile capabilities and appear to build their strategy on agility, effectively managing a wide and frequently renewed product portfolio. From the theoretical framework on agility, high-turbulence agility drivers favour ASPs, given that the capabilities and competences of the existing supply network are challenged in terms of novelty and innovation. Moreover, the fact that the company has developed other relevant agile capabilities and has agility as their strategic priority, increases the likelihood of ASPs to further strengthen their agile strategy.

The approach to agility by Cesare Paciotti, Fabi and Manas is mainly related to a high collection renewal rate, while these companies are not targeting responsiveness to

replenishment orders during the fashion season. Given that all these three companies are positioned in the high price range, they sustain their collection through a very wide and fashionable collection portfolio. Therefore it is an approach where agility is strongly – almost exclusively – related to a high degree of turbulence, with a need to revise radically their market offer every season. These companies have a local district-based supply network and also use the postponement of a very large share of leather purchases and production orders launch[43]. Both these approaches support agility and contribute to the feasibility of agile supply partnerships.

Cesare Paciotti gives much relevance to the quality of the external leather because of its impact on the look of the shoes and this leverages on the different and constantly changing types of processing, colouring or finishing of the leather to impress the customer. Therefore, with the exception of a few evergreen items (such as calf or chamois leather in black or dark brown in the autumn/winter collections), every season the company, in its development phase, is radically revising the choice of the external leather it will choose (and therefore the suppliers that will be contacted). Tanneries are very specialised in their production processes, so the company is not willing or able to negotiate with them on any sort of long-term agreements. Assigned purchase orders fluctuate greatly from season to season. However, in spite of such a widespread adoption of short-term partnerships, Paciotti also considers that long-term partnerships are very important and keeps track of the suppliers and their performance for future seasons, stressing the importance of continuity whenever feasible: "*When a supplier knows you, he also knows your defects and helps you in solving your problems*". The company highlights that short-term partnerships are developed because fashion trends do not allow it to offer more stability. Moreover, short-term partnerships are never born and die within a single season deliberately, unless they are clearly related to non-recurring opportunities such as very peculiar trends in fashion (a special processing or a special component) or very unusual customer requests (as in the case of shoes set with real diamonds requested by an Arab Emir).

[43] Paciotti is ordering a significant share of leather and is launching a relevant part of its production orders before the fashion fairs as it relies for almost 1/3 of its turnover on Directly Owned Shops. These purchases and production launches are required to provide all these shops early on with their initial product instalment for the season.

Fabi is driven by a strong passion for excellence in designing and producing its collection. Such a passion comes together with great attention paid to even the smallest detail and a desire to keep under control as many activities as possible. This applies to all the production activities carried out internally (including the manufacturing of leather soles and some accessories) as well as to supplier management. Every season Fabi is targeting to purchase the best leather for its collection. In order to do so, it chooses among a wide vendor list of about 150 tanneries and often the owner of the company personally goes to these tanneries to make the actual leather selection. Each tannery is very specialised and has been selected for giving the product a special look. Therefore, there are significant changes, season after season, in the leather suppliers that are selected for the collection. Even in such an environment of constant change there are elements of stability given that almost of all of the selected suppliers are not completely new to the company as they are likely to have supplied the company in the past, either for the prototypes/samples or for large-scale production. In any case, the identification of the best fit for the fashion trends comes before the supply network stability.

Manas is building up its fashion collections from a variety of materials, finishings and colours. To be able to build up a very wide offer, every season Manas is relying on different kinds of external leather and it receives its seasonal external leather supplies from more than 20 different tanneries, each specialising in a specific type of supply. "*Ten years ago sourcing was much simpler, given that there were four or five materials, in three or four colours, and they lasted for two or three years. Today there are 20 or 30, even 35 materials, with a wide variety of colours*". All these partnerships are characterised by volumes fluctuating season by season. This means that, even suppliers that have an excellent track record for quality and delivery, might see their orders decreasing because they are involved in a series of models that were not appreciated at the fashion fairs or during the following selling season. In the period 2011-12, around 20-25% of Manas' key components suppliers saw their orders reduced largely due to a misfit with fashion trends, even though their past performance on quality and delivery had been good. Moreover, even if Manas can already rely on a wide vendor list, every year its stylists attend the major leather fair – Linea Pelle in Bologna – to look for new materials and potentially new suppliers. Also the soles are an important part of the fashion collection and have an impact on the look. However, given that they are less

relevant than the external leather and less affected by fashion trends, Manas tends to establish, for this supply category, partnerships that are more stable.

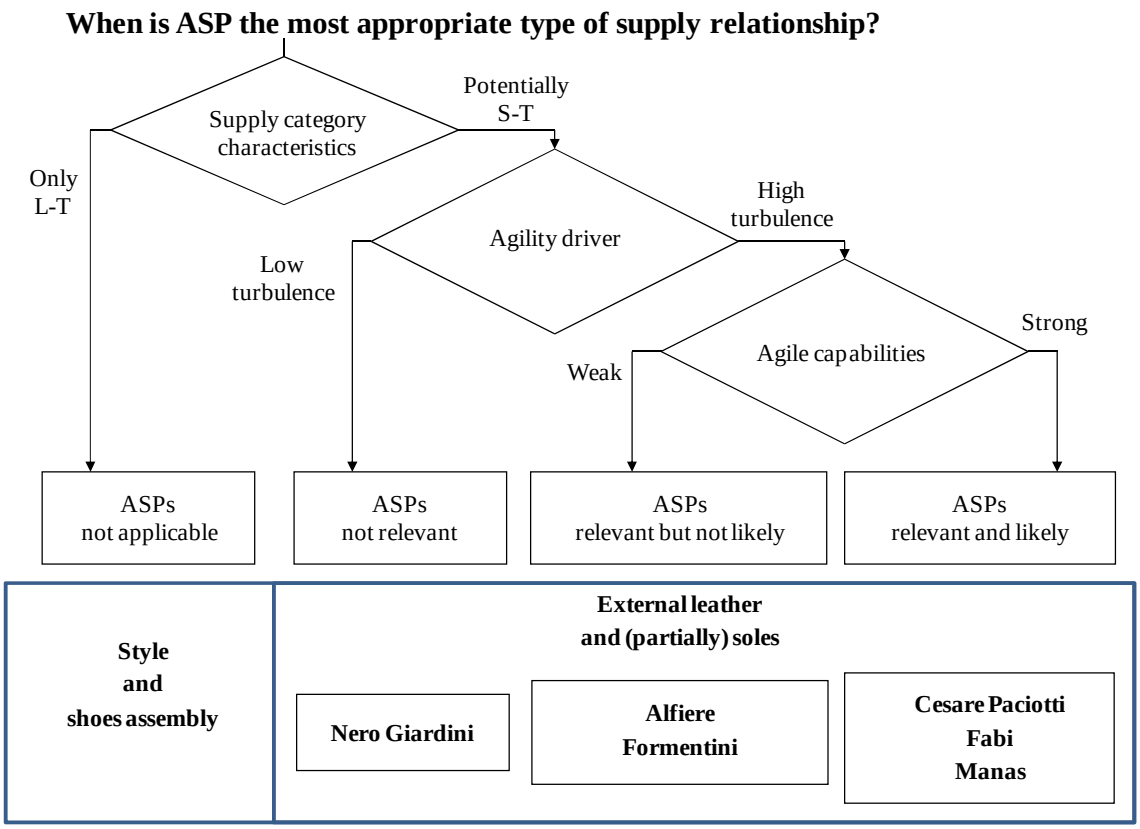
The positive past relationships with external leather suppliers are considered by all these companies as having a great value but such past relationships are not constraining the selection that the stylists are making at the beginning of the season when they are drafting their new ideas and matching them with a certain kind of leather. The suppliers' fit to the expected fashion trends is considered much more important than the suppliers' past performance with regard to quality and delivery. However these companies – everything else being equal – will give priority to suppliers they already know and will turn away from suppliers that, in spite of their innovativeness, have underperformed on quality or delivery.

The evidence from the Cesare Paciotti, Fabi and Manas cases supports the following proposition: *Fashion companies that face high turbulence and have agility as their strategic priority, tend to favour agile supply partnerships over strategic supply partnerships.*

7.3.4 The impact of the agility profile on agile supply partnerships

The in-depth case studies provide evidence for responding to the second research question related to how agility drivers and agile capabilities impact on the decision to develop agile supply partnerships (ASPs) (Figure 16).

Figure 16 - Decision tree on agile supply partnership development



ASPs are relevant mainly for companies that are facing agility drivers related to radical change scenarios, where the competences and specialisation of existing suppliers might not be adequate. Instead, whenever the agility drivers are related to demand uncertainty scenarios, companies favour strategic supply partnerships. In the specific context analysed, the development of ASPs appears not to be particularly relevant with respect to companies, such as Nero Giardini, which are building their agile strategy mainly in terms of responsiveness towards replenishment orders.

ASPs are likely to be implemented by companies that have already developed strong agile capabilities, given that such capabilities represent an important basis upon which to develop ASPs. Instead, whenever important agile capabilities are missing, companies tend to favour strategic supply partnerships as ASPs might not be fully effective. In the specific context analysed, the development of ASPs appears not to be very likely with respect to companies such as Alfiere and Formentini which appear to be trading-off agility for other strategic priorities, i.e. mainly for cost reduction.

ASPs give advantages in terms of novelty and innovation but lose some advantages of long-term supply partnerships. Therefore ASPs are never the only kind of supply partnership in a given supply category. ASPs are developed by footwear companies in order to balance the rigidities of strategic partnerships, given that the fashion industry is characterised by uncertainty and change, but whenever the market situation and/or the product offering allows it, some ASPs can evolve into more stable, long-term partnerships. All footwear the companies interviewed declared that, while abandoning a performing supplier might be necessary because of a change in the fashion trend and because 'the wheel of fortune' might not favour such a supplier, whenever possible they prefer to rely on long-term partnerships.

8 CONCLUSIONS

8.1 Overview of the study

This research has been designed as problem- and theory-driven (Van de Ven, 2007) with the goal to give theoretical and practical contributions to how supply relationships can support agility in the fashion industry, with a specific focus on high-involvement supply relationships.

The fashion industry is characterised by short life-cycles, high volatility and low predictability (Christopher *et al*., 2004; Masson *et al*., 2007; Tran, 2010) and it is an industry where agility is very much required. Supply partnerships are recognised as important in an agile strategy (Christopher, 2000; Swafford *et al.*, 2006; Khan and Pillania, 2008). However, their characteristics are quite unclear, in theory (Gunasekaran, 1998; van Hoek *et al*., 2001; Christopher *et al*., 2004; Zhang and Sharifi, 2007; Braunschiedel and Suresh, 2009) as well in the practice of the context here analysed (i.e. the footwear companies of the Macerata-Fermo Industrial district).

Based on these premises, the research focused on the two following questions:

> RQ 1: How do fashion firms decide on the degree of involvement in supply relationships?
>
> RQ 2: How do fashion firms decide on the duration of supply partnerships?

RQ 1 looked at the decisions on the degree of involvement in supply relationships, by considering a continuum between low-involvement (arm's length relationship) and high-involvement (partnership).

RQ 2 looked at the decisions on the duration of supply partnerships, considering a continuum between long-term (strategic partnerships) and short-term (agile partnerships).

8.2 Contributions to theory

This research provides two theoretical contributions: the first (linked to RQ1) is the integration of the Kraljic supply relationship matrix (Kraljic, 1983) based on the competitive priorities of an agile strategy in the fashion industry; the second (linked to

RQ2) is the definition of the characteristics of and the motivations for "High-Involvement & Short-Term" relationships, i.e. agile supply partnerships.

Kraljic's (1983) matrix while being recognised as the most widely adopted model for supply strategy selection (Gelderman and van Weele, 2005), has been criticised for not taking into account the impact of company strategy on purchasing decisions (Lee and Drake, 2010; Drake *et al*., 2013). With respect to an agile strategy in the fashion industry, this research highlights the relevance of supply partnerships beyond the boundaries indicated by the Kraljic matrix. Evidence from the case studies' shows that footwear companies are pursuing supply partnerships even in supply categories that are not characterised by a great "importance of purchasing" (as in the case of "stylistic services") and by a high "complexity of the supply market" (as in the case of "non-leather soles"), differently from what would result by applying the Kraljic matrix. There are two industry specific variables – "relevance of the fashion look" and "importance of customisation" – that are taken into account in the decision to build up a supply partnership. These two variables appear related to the broader category of agility, confirming that the selection of supply partnerships is strongly influenced by the overall company strategy (Lee and Drake, 2010).

Supply partnerships in an agile strategy, while recognised as important (Burgess, 1994; Christopher, 2000; Khan and Pillania, 2008), are not clearly described as to their characteristics and their motivations by either the agility literature or the buyer-supplier relationships literature. The agility literature is unclear on which time frame supply partnerships should have in order to support agility: long-term partnerships, while allowing an improvement both in efficiency and response time (Yusuf *et al*., 2004; Zhang and Sharifi, 2007), might prevent the required changes in the supplier base so as to access new skills or new resources (Goldman *et al*., 1995; Christopher *et al*., 2004). The literature on buyer-supplier relationships neglects the possibility of short-term partnerships, stressing the importance of a long-term time frame for supply partnerships given the "time compression diseconomies" in developing a supply partnership (Kotabe *et al*., 2003), as well as the loss of "relational benefits" derived from abandoning an existing partnership (Mesquita and Brush, 2008). Case studies' evidence highlights that high-involvement relationships, while in most cases associated with a long-term+

reference time frame, can also be developed with a short-term horizon. Specifically, when companies have to face high-turbulence agility drivers – as in the case of a high collection renewal rate – and are targeting an agile strategy – as when they leverage on a local supply network and they postpone, after the fashion fairs, the bulk of their purchase orders, they might further strengthen their agility by developing some "High-Involvement & Short-Term" relationships. These agile supply partnerships are developed to allow the company to face the radical changes that take place from one fashion season to the next. These companies are fully aware of the value potentially brought by stable and long-term supply partnerships in terms of productivity and often also in terms of response time. However, the need for pursuing first a high degree of agility brings them to pursue selectively agile supply partnerships.

8.3 Implications for practice

The empirical analysis highlights several practices used by Macerata footwear companies in the key phases of the supply relationship life-cycle (Dwyer *et al*., 1987; Jap and Ganesan, 2000; Jap and Anderson, 2007) where the agile supply relationship is more peculiar: practices for defining when to establish an ASP (the awareness phase); practices for managing the start of an ASP (the exploration phase); and practices for terminating an ASP (the dissolution phase). These are the phases where the paradox of HI-ST relationships is more evident. Instead in the build-up as well as in the maturity phases, these partnerships are managed as "standard high-involvement" relationships, given that all the footwear companies in the study are managing their HI-ST relationships as if these relationships were intended to last. These footwear companies are aware that terminating a working supply relationship because of a need for agility does not create value in itself and has to be limited to cases when the required change cannot be managed through the existing supplier(s).

The practices for defining when to establish an ASP refer to the strategic decision of having agility as a competitive priority as well as the selection of the supply category. As reported in the analysed cases, the only companies that are establishing ASPs are those that strategically target a high degree of agility, in terms of a high renewal rate of their seasonal collections and a local supply base. While the need to face fashion trends is peculiar to these footwear companies and while companies in different industries will

have different agility drivers, it can be assumed that only companies that target agility as a priority will have an interest in evaluating ASPs. Similarly, ASPs have to be considered only with respect to supply categories that are relevant for agility, given that in those supply categories where the pressure of turbulence and change is not very strong supply partnerships may be effectively deployed over the long-term (HI-LT).

The practices for initiating an ASP relate mainly to the use of a commercial intermediary (as in the case of Fabi) or to the development of a wide vendor list and the use of sample supplies (as in the cases of Cesare Paciotti, Fabi and Manas). A commercial intermediary representing different companies (in the specific case representing various tanneries) appears a trusted reference point for getting in touch with new suppliers. The relationship with the intermediary is in itself an HI-LT relationship that allows the footwear company to get in touch with many potential suppliers with whom it can establish ASPs. Moreover footwear companies try to articulate a wide database of qualified vendors in the critical supply categories, to be able to select from the list in case they need to renew their supply base due to different fashion requirements. The supplies for prototyping and sampling are quite specific to this industry; however, similar practices can be effectively adopted by companies within different industries.

The practices for terminating an ASP are rooted in the use of short-term contracts (as in the case of Cesare Paciotti, Fabi and Manas) and in the development of a second sources (as in the case of Manas). The use of a short-term contract is a necessary requisite allowing footwear companies to terminate partnerships at the end of each fashion season. In the Macerata footwear district, contract duration is generally limited to a single fashion season in most of the supply categories, with the relationship with designers being a notable exception. This is partly possible because relation-specific investments made by suppliers tend to be limited. In industries where suppliers are required to make significant investments upfront, short-term contracts might not be feasible, therefore reducing the room for ASPs.

The practices identified in the case studies confirm the evidence from the systematic review of the literature (Chapter 3), namely the four characteristics that contribute to overcoming the apparent paradox of those partnerships: 1) ASPs are part of a portfolio

of both short-term and long-term high-involvement relationships; 2) ASPs have project-based features; 3) ASPs are developed starting from a group of pre-qualified suppliers; and 4) ASPs are supported by organisational procedures and IT tools.In the Macerata-Fermo district, these characteristics appear supported in the case of the agile supply relationships established with external leather suppliers. In particular:

Characteristic 1: ASPs are part of a portfolio of short-term and long-term high-involvement relationships. This characteristic is supported, given that the footwear companies target mainly long-term partnerships (e.g. strategic partnerships) even when they are also developing short-term partnerships (e.g. agile supply partnerships). While strategic partnerships are developed to strengthen the responsiveness these fashion companies need, ASPs are managed in a way that allows the shoes companies to maintain the required degrees of freedom for facing the changes in the fashion trends;

Characteristic 2: ASPs have project-based features. This characteristic is also supported, given that all these relationships are based on the collection development and launch, e.g. a precise project with a starting point and a conclusion. The characteristics of the business itself are conducive to a project-based approach in managing supply relationships;

Characteristic 3: ASPs are developed starting from a group of pre-qualified suppliers. Again, this characteristic is supported, given that all these companies have developed over the years a database of potential suppliers that they have already tested – whether only for the prototyping/sampling phase or for the actual production phase. Therefore, when they need to look for suppliers in a given fashion season, they start from such a list. Moreover, in the few cases when they select a supplier outside of their existing supply list, footwear companies have the chance to test the new supplier in the prototyping phase;

Characteristic 4: ASPs are supported – even if only to a partial extent –by dedicated organisational procedures or IT tools. The Macerata-Fermo footwear companies are using practices such as the development of a wide vendor list as well as the development of collaboration agreements with commercial intermediaries or double sourcing procedures, in order to support a smooth management of both the start and end of agile supply relationships. These organisational procedures are often quite informal

and supported only to a limited extent by IT tools, given the overall culture reluctance to strict proceduralisation and formalisation that is characteristic of most of the Macerata-Fermo footwear companies.

Based on this evidence, two contributions to practice are presented: the first refers to Macerata-Fermo footwear companies and the second to companies competing in fast clockspeed industries.

Macerata-Fermo footwear companies might invest in IT tools for better managing their agile supply partnerships, considering that IT plays an important role in improving supplier management practices aimed at strengthening agility (White *et al*., 2005; Qrunfleh *et al*., 2012).

Companies competing in industries where fashion plays a major role – as well as, from the systematic literature review, companies competing in fast clockspeed industries – should look at the development of agile supply partnerships, bearing in mind the increasing degree of turbulence they have to face. These companies should implement the three practices and follow the four characteristics described above, investing in the development of ASPs in order to increase their degrees of freedom with respect to uncertainty and change.

8.4 Research limitations and opportunities for further research

This research followed a qualitative exploratory approach based on case studies carried out in the context of an Italian footwear district. The chosen research design has three major limitations, two of them related to the protocol adopted for the case studies and one related to the characteristics of the context.

The limitations related to the case study protocol refer to the limited use of other data beyond the interviews and to the limited use of different informants within most of the cases. As already described in Chapter 4, the case studies have been primarily based on interviews, given the limited relevance of financial reports data and the difficulty in accessing longitudinal data on purchase orders for confidentiality reasons. A further study might overcome the difficulties of obtaining quantitative data by a research design based on a survey, or by a longitudinal analysis carried out only with respect to the supply category that proved to be more relevant for agile supply partnerships, e.g. the

external leather. Such an approach would allow adding to the qualitative exploratory analysis quantitative evidence on the phenomenon. Similarly, as already presented in Chapter 4, in most of the case studies, the interviews have been based on a single informant, an interviewee in a top position in the company – either the owner or the CEO/general manager – and therefore in a position to effectively provide an overall view on the approach towards supply partnership management. A further study might overcome this limitation by choosing to maintain the anonymity of the interviewed companies so as to be able to interview their leading suppliers and elicit their perspective on the supply partnership strategy. Such an approach – more than the use of additional informants within the buyer company – would allow a deeper understanding of agile supply partnerships as seen from the supplier side, considering that these partnerships appear to transfer to them a larger share of the risks related to facing uncertainty and change.

The limitations related to the selected context have an impact on the external validity of the results[44]. As the generalisation targeted by case studies is not a statistical one but relies "*on analytical generalization ... [where] the investigator is striving to generalize a particular set of results to some broader theory*" (Yin, 2009, p. 43), three characteristics of the chosen context impact on the external validity of this research: the nature of the turbulence affecting the industry, the characteristics defining the high-involvement relationships, and the availability of a pre-qualified supplier base.

The turbulence affecting the footwear industry, and more generally the fashion industry, is mainly related to the constantly changing fashion trends, unfolding without a precise pattern season after season. Therefore the motivations for agile supply partnerships (ASPs) that characterise the fashion industry should be further investigated with respect to the agility challenges in industries – such as high-tech industries – where the turbulence is mainly driven by the pattern of technological innovation[45] (Utterback, 1994; Katzy and Crowston, 2008). In these contexts the change of suppliers from one

[44] However, it should be highlighted that the focus on a specific context, as with the Macerata-Fermo footwear district selected here, while reducing the external validity, represents an important control factor and contributes to the strengthening of the internal validity of the research (Gibbert *et al.*, 2008).
[45] However, it should be highlighted that fashion/aesthetic innovation is taking place in an increasing number of industries, including high-tech industries (Eisenman, 2013).

product to another, or even from one generation to another, might clash with accumulated knowledge, especially when related to proprietary knowledge.

High-involvement relationships established by the footwear companies are mainly related to information sharing and to trust-based governance mechanisms, with a limited relevance of investment sharing. Even more, a large part of the investment shared by buyers and suppliers is represented by moulds for customised soles that are short-term investments likely to be used for a season or little more and to a very minimal extent they relate to the external leather, the supply category where ASPs are mainly taking place. Therefore the barriers towards the development of ASPs should be further investigated with respect to the agility challenges in capital intensive industries where the shared investments might be relevant and targeted to a long-term horizon (Shaw *et al*., 2005). These contexts allow the evaluation of how strong the agility drivers need to be in order to give a large enough incentive to break stable supply relationships involving significant shared investments.

The district context taken into account – as with any district context – is characterised by a local supply network that almost naturally represents a pre-qualified supplier base, given that the companies located in the district share common values besides geographical proximity and that the reputational mechanisms within the district are much stronger than in a geographically dispersed supply chain (Becattini, 2002). Therefore further research taking place in international/global supply chains is required to investigate the characteristics of ASPs outside district contexts, especially regarding selection mechanisms for building up a list of pre-qualified suppliers as well as the organisational mechanism and IT tools used for managing ASPs.

All these limitations related to external validity, call for more research aimed at strengthening and extending the findings of this exploratory work. Given that increased turbulence is affecting an growing number of industries, further research on the motivations and characteristics of agile supply partnerships appears very relevant to further overcome – both in theory and practice – the apparent paradox of high-involvement and short-term supply relationships and to contribute towards a more effective path in the implementation of an agile strategy.

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APPENDICES

Appendix A - Chapter 3

APPENDIX A 1 – Detailed articles coding with supporting evidence

Reference	Codes	Description of the characteristics of supplier relationships in an agile supply chain
Chiang, Kocabasoglu-Hillmer and Suresh (2012)	HI (1-2)	Firm's supply chain agility is positively influenced by "information sharing" defined as: "IS1 - production schedule information sharing with suppliers; IS2 - synchronized scheduling of production with suppliers; IS3 - cost information sharing with suppliers" (p. 77), as well as by "supplier development" defined as: "SD1 - financial assistance to the suppliers; SD2 - technological assistance to the suppliers; SD3 - training in quality issues to suppliers' personnel" (p. 77).
	LT	Firm's supply chain agility is positively influenced by "strategic purchasing" defined as the selection of "a group of strategic suppliers to develop a possible long-term partnership" (p. 69).
	LTU	The two control variables linked to turbulence are "product seasonality" and "product perishability" (p. 60).
Ogulin, Selen and Ashayeri (2012)	HI (1-3)	Both Capability Connectivity (CC) and Relationship Alignment (RA), the two variables impacting on informally networked supply chains (INSCs), include high-involvement characteristics, namely: "technical and process standards recognised and used by supply chain partners" (p. 331), "shared values, trust and commitment" (pp. 332-333) and "willingness to share information and knowledge" (p. 333).
	BOTH	Both durations are recognised as relevant: "Typically, supply chain partners would build relationship traits such as commitment, trust, joint objectives, communication, and the exchange of information over time. … in highly dynamic situations, supply chain partners have only limited time to get and work together to a market opportunity" (p. 329). Moreover, the survey asks "How important is quick access to alternative supply source?" (p. 348).

	HTU	The key construct (Informally Networked Supply Chain – INSC) is described as measuring "the ability of supply chain partners to respond to transient opportunities in the context of highly dynamic markets" (p. 336).
Whitten, Green and Zelbst (2012)	HI (1-3)	Information sharing and, more generally the collaboration with suppliers, are recognised as practices characterising agile supply chain management: "This organization works hard to promote the flow of information with its suppliers" and "This organization works hard to develop collaborative relationships with suppliers" (p. 36).
	BOTH	The authors report that "the key to successful supply chain management is the ability to develop long-term strategic relationships with supply chain partners" (p. 43). They also recognise the need for "fresh suppliers" whenever there is the need "to meet structural shifts in markets [and] modify the supply network [to reflect changes] in strategies, technologies, and products". The statement "This organization uses intermediaries to develop fresh suppliers" (p. 36) is related to adaptability, making reference to Lee's Triple-A supply chain model (Lee, 2004).
	HTU	The business environment is characterised in the overall frame given that "these capabilities [of agility, adaptability, and alignment] are developed and renewed in response to changes in customer demand and changes in the structure of markets and economies" (pp. 29-30).
Chen and Chiang (2011)	HI (1-2)	An agile relationship between the Contract Manufacturer (CM) and the OEM is strong and strengthened by information sharing. "IS integration provides a firm with a useful tool to have more efficient communication with its partners. Thus, IS integration plays an important role in enabling a firm to sense the change and respond rapidly" (p. 650)
	LT	The IT/IS investments create long-term relationships: "reciprocal [IS integration] investments are transaction-specific investments made by a firm which tends to promote a long-term or stable relationship with its value chain partners in an exchange relationship where the promotion increases the level of cooperation" (p. 648). "IS integration is an enabler that binds network partners together" (p. 650).

	UNC	The case study is based in the optical storage industry and focuses on the mixed channel strategy. The specific context suggests a business environment with high-turbulence but the main challenges described relate to supply chain/delivery planning.
Zhang (2011)	HI (1)	Given that the author distinguishes, within an agile approach, between quick, responsive and proactive players, high-involvement relationships are very relevant both for the responsive player ["suppliers are involved in defining new products, product development, and planning." (p. 307)] and for the proactive player ["building strong partnerships with suppliers is top on the company's priority" (p. 308)]. High-involvement relationships do not appear to be important only for the quick player: "less importance was attached with involving suppliers in defining new products, planning, and product development" (p. 306).
	LT	All the three players are putting a particular emphasis on long-term relationships: "The policy concerning suppliers is to build long-term relationships" (p. 307).
	HTU	All the three players are facing "[agility] drivers with high impact" that include major sources of turbulence such as: "Rapid change in the production model", "Rapidly changing market", "Innovation rate increase" and "Short new product time to market" (p. 311). Minor sources of turbulence are also considered as "Short delivery time" or "Quicker delivery" (p. 311).
Tran (2010)	HI (1)	To achieve agile synchronization "extensive vertical knowledge sharing with suppliers is key" (p. 149).
	BOTH	To achieve an agile supply chain management, fashion companies are "balancing long-term partnerships with short-term, contract-based relationships" (p. 148).
	HTU	In the fashion industry: "the pace of market changes, the intense competition and the uncertainty of consumer acceptance have increased over the years" (p. 136). Moreover the author reports also that the fashion market is "increasingly unpredictable, complex and contradictory" (p. 136).

Braunscheidel and Suresh (2009)	HI (1-2)	High-involvement is analysed in terms of integration with key suppliers which is recognised as important for agility. "Integration with key suppliers" is made of: "IS1 - Our inventory levels are shared with our suppliers; IS4 - Our key suppliers deliver to our plant on a JIT basis; IS5 - We have high corporate level communication on important issues with key suppliers; IS6 - Sharing information via the Internet is important to our supply chain; IS7 - We work with our suppliers to seamlessly integrate our inter-firm processes (e.g., order placement); IS8 - Our supply chain employs rapid response initiatives (e.g., continuous replenishment or vendor managed inventory); IS9 - We jointly develop new products/services with our suppliers" (p. 138).
	LT	The reference is towards long-term partnerships, even if the item "IS 3 - We strive to establish long-term relationships with our suppliers" (p. 138) has been dropped from the analysis.
	HTU	A high level of turbulence is the reference framework, given that the article is focused on major disruptions and on risk mitigation/response, even though none of these elements is explicitly present in the tested model. However, the model makes reference to "customer orientation" (pp. 137-138), highlighting the importance of looking at market changes, as well as to a "learning orientation" (p. 138).
Katzy and Crowston (2008)	HI (1-3)	The article focuses on "competency rallying", "a collaborative network process" (p. 697). "Participation in collaborative projects proved to be a driver for the identification and development of competencies" (p. 685). Moreover "the network partners engaged in developing network cooperation processes, in analogy to sales or purchasing process. ... Firms therefore engaged in the reengineering of firm-boundary-spanning processes to make cooperation between firms in the network as efficient as within-company processes. Duplicate activities ... were traced and eliminated" (p. 688).
	BOTH	"The network engages in the recurring creation of short-term projects for the development of a new technology product from a relatively stable evolving regional network of firms" (p. 681). There is a long-term relationship platform represented by the network and its distinct collaboration routines for "competency rallying": competency

		creation, market facing, competency marshalling, and cooperative effort.
	HTU	The focus is on a turbulent environment and on technology innovation where companies face the risk that "necessary competencies for desired market innovation may be missing and that existing internal competencies become irrelevant or outdated" (p. 679).
Khan and Pillania (2008)	HI (2-3)	High involvement is mainly referred to as to the importance of "strategic sourcing partnerships" including variables such as "communicating future needs to suppliers", "early involvement of key suppliers in planning and goal setting process", "involving suppliers in a continuous improvement programme", "developing electronic ordering capabilities with suppliers" (p. 1516). Moreover there is another factor derived in the model - "trust in supply chain members" (p. 1518).
	BOTH	The duration is not analysed directly but it seems that the model assumes both long-term and short-term relationships. There is a reference to established relationships with the suppliers (also with explicit reference to JIT capabilities) and "trust in supply chain members" can be seen as a proxy (p. 1518).
	UNC	The model is not taking into account any specific turbulence scenario.
Baramichai, Zimmers and Marangos (2007)	HI (1-2-3)	There are two main scenarios of high-involvement partnerships: agile virtual enterprise and agile extended enterprise which are both characterised by: "Process integration; Collaboration efforts; Supplies development" (p. 340 fig. 4). It is important to "ensure that agile suppliers are selected and integrated into the supply chain …. Ensure that the company has the appropriate level of supplier-buyer integration, sufficient internal infrastructure and a proper relationship to enhance and capitalize on suppliers' agile capabilities" (p. 345).
	BOTH	Several examples of change response strategies based on supplier relationships are mentioned. At the two extremes: "rely on supplier's change response capability [when] existing suppliers have sufficient ability to respond to change" (p. 344) which has been coded as representative of a long-term partnership; and "replace [existing

		suppliers] with new suppliers [when] existing suppliers do not have sufficient ability to respond to change and need to be removed from the chain" (p. 344) which has been coded as representative of a short-term partnership. Moreover, the two scenarios of agile virtual enterprise and agile extended enterprise are built on very different types of relationship: in the former case "temporary, cooperative partnership" (p. 341) and in the latter "collaborative, long-term partnership" (p. 341).
	HTU	The company analysed in the case is a composite medium-size plastic manufacturing company that at a certain time ended up having 90% of its premium business with a single customer and that was hurt by the entry of Chinese manufacturers and the company had to reposition its business. More generally, their model considers both turbulence scenarios: "changes that are inherent/intrinsic to the normal course of conducting business. … changes that can be attributed to the volatility of the external business environment. These changes are unlikely to be predicted or anticipated in advance and always have a major impact on a company's business" (p. 336).
Hoyt, Huq and Kreiser (2007)	HI (1-2-3)	"When initial tooling investments are high and there are few qualified suppliers for a specialty type product" (p. 1593) supply chain governance mechanisms are based on high-involvement relationships. "There will be significant levels of joint action between buyer and seller: (sg6) We work closely with these suppliers to develop prototypes and test subassemblies. (sg7) We work closely with these suppliers to develop long range plans and market forecasts; (sg8) We share technical information with these suppliers" (p. 1593). Also "there will be a high level of trust and cooperation between the buyer and supplier: (sg9) We monitor the performance of these suppliers very closely" (p. 1593). However "for those situations where the product is a commodity and there is a high competition in the supplier's market" (p. 1593) supply chain governance mechanisms do not include high-involvement relationships and are based on an arm's length relationship.
	LT	Given that the theoretical reference framework for supply chain governance mechanisms is Transaction Costs Theory, long-term relationships are taken into account with respect to specialty products. The commodities are managed through short-term market

		mechanisms but there is no high-involvement relationship in these cases.
	HTU	By design, the survey looks at industries that are "hostile-dynamic-complex" (p. 1575). "These industries all share similar environments such as: intense competition for a limited number of customers, strong customer demand for responsiveness and choice, limited resources, and competitive rivalry based on price and quality" (p. 1580). More specifically, the three industry groups with such characteristics that were surveyed are: automotive parts and accessories; instrumentation equipment; semiconductor components (p. 1580).
Masson, Iosif, MacKerron and Fernie (2007)	HI (1-3)	"While there were close partnership relationships between retailers, the capital intensive fabric and logistics suppliers and the intermediaries, there was little if any relationship between the retailers and the garment manufacturers" (p. 252). The collaboration between retailers and intermediaries was very strong given that "the advantages of using these intermediaries were enormous. They have product technical expertise, knowledge of and access to existing supply networks, and almost always offer a complete sourcing and logistics service with local expertise" (p. 247). The collaboration was also strong with "integrated service providers ... [where] customers could get assistance in any area of product development including product design, raw material selection, and sample development" (p. 250).
	BOTH	The fashion supply chains include both long-term and short-term relationships. "There were clearly strong partnerships based on commitment and trust between many of the retailers and their intermediaries but this was not always the case between the intermediaries and their suppliers, particularly the garment manufacturers" (pp. 247-248).
	HTU	"There can be few industries where there is a greater need for a more responsive and rapid design/manufacturing/delivery lead-time while at the same time pressure to source globally to reduce costs" (p. 239).
Oberoi, Khamba, Sushil and Kiran (2007)	HI (1)	The authors analyse strategic sourcing practices that, ranging "from supply-base optimization to early supplier design involvement" (p. 207), can be classified as leading to high-involvement partnerships.

		"Supplier involvement in modifying products has … significantly shown a positive impact in managing the frequent volume fluctuations" (p. 212).
	LT	Long-term is mentioned as the reference duration for partnership development. However, it is found that "association with supplier base on long term basis ... [is only] weakly correlated with volume flexibility" (p. 212).
	LTU	While there is no precise reference to the degree of turbulence in the business environment, the three dependent variables in the model are all related to a low degree of turbulence given that they are: volume flexibility; modification flexibility; and delivery flexibility.
Paulraj and Chen (2007)	HI (1)	The model of "strategic buyer-supplier relationships" is based on high-involvement relationships mainly with regard to inter-firm communication. Strategic buyer-supplier relationships "help foster collaborative behavior that facilitates joint planning and processes beyond levels reached in less intensive trading relationships" (p. 9).
	LT	The model of "strategic buyer-supplier relationships" is based on long-term relationships with a limited number of suppliers, given that "as two firms endure the relationship over a longer period of time, they develop interaction routines and coordination mechanisms that help them disseminate and interpret information and better integrate their logistics activities" (p. 9).
	LTU	While there is no precise reference to the degree of turbulence in the business environment, the indicators related to "agility performance" are all related to a low degree of turbulence: Volume flexibility; Scheduling flexibility; On-time delivery; Delivery reliability/consistency; Prompt response (p. 14).
Vázquez-Bustelo, Avella and Fernandez (2007)	HI (1-3)	Value chain integration – one of the five dimensions of agile manufacturing – is strongly linked to high-involvement partnerships, given that it includes items such as "close relationships with suppliers, ... mutual sharing of data and technical and commercial information with suppliers, ... joint work with suppliers on the product design and development process, ... joint work with suppliers on planning and market forecasting, ...joint work with suppliers to improve component quality, and permanent interaction with

		suppliers using NTIC" (p. 1330).
	BOTH	Even if in the questionnaire there is no specific reference to any given duration, in the theoretical part there are references also to short-term collaboration: "agile manufacturing is identified with a more flexible approach towards inter-firm cooperation [with respect to the lean approach]" (p. 1307) and "rapid-partnership formation" (p. 1311).
	HTU	The focus of the analysis is on turbulent environments defined as having high levels of dynamism and hostility. Dynamism is defined through the following items: "Fast-changing customer tastes and preferences; Very frequent innovations in production processes; Very frequent innovation in products and/or services" (p. 1331) and hostility is defined through the following items: "The plant faces great competition on a global level; Very intense competition to occupy new market niches" (p. 1331).
Doyle, Moore and Morgan (2006)	HI (1)	"The changing dynamic of fashion retailing and the desire for both low cost and flexibility has by necessity promoted a need for closer relationships, characterised by co-operation and communication between buyers and suppliers. … while viewing the relationship as a partnership may be optimistic, mutual benefits of a closer working relationship may exist, in particular through sharing of information" (p. 275). Some companies highlight that "it would prefer to consolidate its supply base … the aim is to build supplier partnerships" (p. 279).
	BOTH	Both long-term and short-term partnerships are taken into account. Given "the resource investment (particularly time) associated with supplier selection and the ramifications of inappropriate decision" (p. 275) the goal is to consolidate the supply base but often there is a need for new suppliers.
	LTU	The reference industry of the case studies is "fast moving fast retailing" characterised by "short product life cycles, high levels of impulse buying and high volatility of demand coupled with low predictability of demand" (p. 272), but the degree of turbulence the agile strategy is required to face is low, given that the authors are dealing with logistical challenges.

Narasimhan, Swink and Kim (2006)	HI (1-2-3)	High-involvement relationships are based on: "Supplier information sharing: we share real time production schedule information with suppliers; we share cost information with our major suppliers, ..." (p. 453), "Supplier development: we provide technical assistance to suppliers; we provide training in quality issues to supplier personnel; we provide financial assistance to suppliers" (p. 454) and "Supply partnerships: … we have a high degree of mutual trust with our suppliers; … we pursue joint investments with suppliers, ...) (p. 454).
	LT	Supply partnerships are based on long-term relationships: "We establish long-term contracts with suppliers" (p. 454).
	UNC	There is no precise reference to the degree of turbulence in the business environment and the selected performance measurement items seem not to be limited to low-turbulence scenarios: delivery reliability; delivery speed; volume flexibility; but also design quality and product flexibility (as "lead time to introduce new products" or "number of new products introduced each year") (p. 456).
Storey, Emberson and Reade (2005)	HI (1-2-3)	The analysed partnership is a "high-involvement" partnership between the retailer (Marks & Spencer) and one of its major suppliers (Courtaulds). It is centred on information sharing and the launch of a vendor management initiative with dedicated IT investments. However, high-involvement supplier relationships, while considered very relevant and potentially very effective, are looked at through a critical lens, highlighting the existing difficulties in establishing and maintaining a relationship based on "trust and commitment" (p. 256).
	LT	Long-term is the reference framework of the collaboration, even though it should never be taken for granted. The period taken into account in the case analysis extends from 1991 to 2001, but the relationship between the two companies is much longer. However, "alternative corporate strategies and priorities can rudely interrupt and easily brush aside organisational collaborative relationships" (p. 256).
	LTU	The collaboration is centred on supply chain optimisation, from a vendor managed inventory initiative. Even though in the long period taken into account there have been several changes in the business

		environment (offshoring being the main one), no major sources of turbulence are taken into account.
White, Daniel and Mohdzain (2005)	HI (1-2)	The development of high-involvement relationships is supported by IS (and in the case in point, new web services) given that information technology gives the "ability for multiple organisations in the supply chain to connect to each other, allowing improved performance of the entire chain since information from any tier in the supply chain is available to any other organization in the chain" (p. 396).
	BOTH	Both long-term and short-term partnerships are taken into account. "The notion of agility in the supply chain suggests the need to be able to develop close linkages with trading partners, ideally supporting a number of key processes that will improve the responsiveness ... However, for reasons such as the phasing out of older products and the introduction of new products, the expansion into new geographical markets or a growth in demand, it may be necessary for extant linkages with existing trading partners to be rapidly dismantled and new, equally close relationships formed with different partners" (p. 400).
	UNC	Even if the case study is based in the electronics industry with a general description of its challenges and even if there are generic references to market changes, such as "the phasing out of older products and the introduction of new products, the expansion into new geographical markets or a growth in demand" (p. 400), there is not enough detailed evidence to allow a precise coding of the degree of turbulence in the business environment.
Brown and Bessant (2003)	HI (1)	Given that "agile linkages" – defined as "intensively working with and learning from others outside the company, especially customers and suppliers" (p. 713) – are considered to be one of the four pillars of agility, high-involvement partnerships include collaboration both for production planning and for new product development as it appears in four out of the six plants examined. "First class relationships with suppliers who were often seen in plant visits (Computer assembler 2)" (p. 719). "The core database has real-time contact with suppliers (Computer assembler 3)" (p. 719). "The plant is suffering from former poor relationships with suppliers, which it is now trying to rectify. ... the suppliers are loathe to become closely

		linked – particularly in new product development (Auto plant 4)" (p. 720). "It has first class relationships with suppliers ... It has real time links with suppliers and has monthly production schedules (Auto plant 5)" (p. 720). "It has a closely linked supplier base and works with key suppliers in a range of operations areas including having three hours of inventory; as well as close supplier involvement in new product development (Auto plant 6)" (p. 720).
	LT	The authors assume supply relationships are mainly based on JIT and therefore long-term. "Both plants spent up to 18 months choosing key suppliers and, once chosen, suppliers of major components were expected to locate no more than 20 miles [away]" (p. 723).
	LTU	The focus of the article is on mass customisation and the challenges related to "agile linkages" (and therefore High-Involvement partnerships) are related to the manufacturing/operations strategy and to inventory management in particular (p. 723), implying a low degree of turbulence to be faced by the agile strategy.
Warburton and Stratton (2002)	HI (1)	The high-involvement is mainly related to information sharing and to alternative orders in case the initial forecast is wrong: "It is important for the retailer to realise that they are trading capacity for inventory. … If the forecast does not materialize, then the retailer is obliged to fill the capacity with some type of manufacturing. ... a genuine partnership has to evolve" (p. 106). "We have always had a very close relationship with our customer's design team" (p. 102).
	LT	Agility appears to be supported by long-term relationships. "We also set about educating our customers about the kind of relationship we required, and specifically sought out customers willing to develop a long-term relationship" (p. 105).
	LTU	The case study is in the fashion industry and highlights the challenges of a "relentless shift to offshore manufacturing". Its focus is on the logistical challenges of facing unforeseen demand and forecast errors (p. 104) and therefore making reference to a low degree of turbulence.
van Hoek, Harrison and Christopher	HI	High-involvement partnerships are taken into account as part of "cooperating to enhance competitiveness", one of the four basic

(2001)	(1-3)	dimensions of agility (p. 129). This agility dimension includes items such as "Virtual organizations, suppliers as partners; encourage sharing and cooperation even with competitors" (p. 134).
	BOTH	The "Network integration" dimension of agility highlights the trade-off between "fluid clusters and long term supply chain partnerships", assuming that "agile policies emphasize fluid clusters of network associates, while lean policies focus on a more fixed set of long-term stable partnerships" (p. 141).
	UNC	There is no specific reference to the degree of turbulence in the business environment.
Bal, Wilding and Gundry (1999)	HI (2-3)	High-involvement partnerships are described in terms of "reward the supplier through shared risk and revenue; and business linkage based on highly-integrated business processes using telecommunication tools" (p. 76). "Virtual teaming could allow joint commitment, feelings of mutuality, trust and creativity, and rapid decision-making" (pp. 80-81).
	BOTH	While there is no reference to a duration in the case analysed, in the theoretical frame both time horizons are mentioned. "A supplier no longer hands over goods in response to an order, but is a long-term supporter or partner of the customer" (p. 76) and "agile networked alliances are network-enabled relationships between organisations that can be formed and dissolved rapidly, but while in operation enable an affiliation between parties that is focused on enriching customers, mastering change, leveraging (all parties') resources, and thus cooperating to compete for mutual commercial benefit" (p. 76). Moreover "[virtual teams] are of a finite duration, with a beginning and end (few teams are permanent)" (p. 77).
	LTU	All three categories of turbulence taken into account refer to logistics/planning issues and are not related to any major change in the market: "design turbulence relates to disturbances caused in the production flow by changes in design" (p. 73); "volume turbulence is a consequence of changes in total production volumes and usually occurs in the form of capacity constraints or materials shortage" (p. 73); "mixed turbulence relates to disturbances caused … by a change in the distribution of the volumes of different products (or product models) manufactured in the same facility" (p. 74).

Meier, Humphreys and Williams (1998)	HI (1)	Suppliers are involved both at the organisational level: "openly share information about the buying firm with the suppliers", "involve supplier representatives in the development of production schedules and design specifications" (p. 42); as well as at the individual level: "relationship development/interaction" (p. 43).
	LT	The authors assume a long-term duration and a whole group of questions is entitled "Relationship development/interaction, long-term orientation" (p. 43). This group of questions includes items such as "Be loyal to suppliers; Maintain relationships with a limited pool of suppliers; Be willing to establish relationships with suppliers; Maintain good working relations with relevant departments within the supplier's firm" (p. 43).
	UNC	There is no reference to the degree of turbulence in the business environment.
Stank and Lackey (1997)	HI (1)	High-involvement supply partnerships appear linked to JIT practices and are related both to information and to product development: "Kanbans are being used with customers and suppliers, where appropriate; … Projections of future requirements for purchased items, beyond the suppliers' quoted lead times, are shared with suppliers to ensure adequate capacity...; ... Key suppliers participate in the development and design of new products" (p. 115). Moreover, "the number of suppliers is being reduced, and single sourcing, where practical, is a company objective" (p. 115).
	LT	Supplier relationships are long-term. "Long-term contracts (e.g. multiyear, life of product) are being established with the key suppliers who supply 80% of the purchased volume" (p. 115).
	LTU	The focus is on logistical capabilities and logistics performance (pp. 102-103). The challenges taken into account relate to supply chain issues, and therefore they are classified as characterised by a low degree of turbulence.

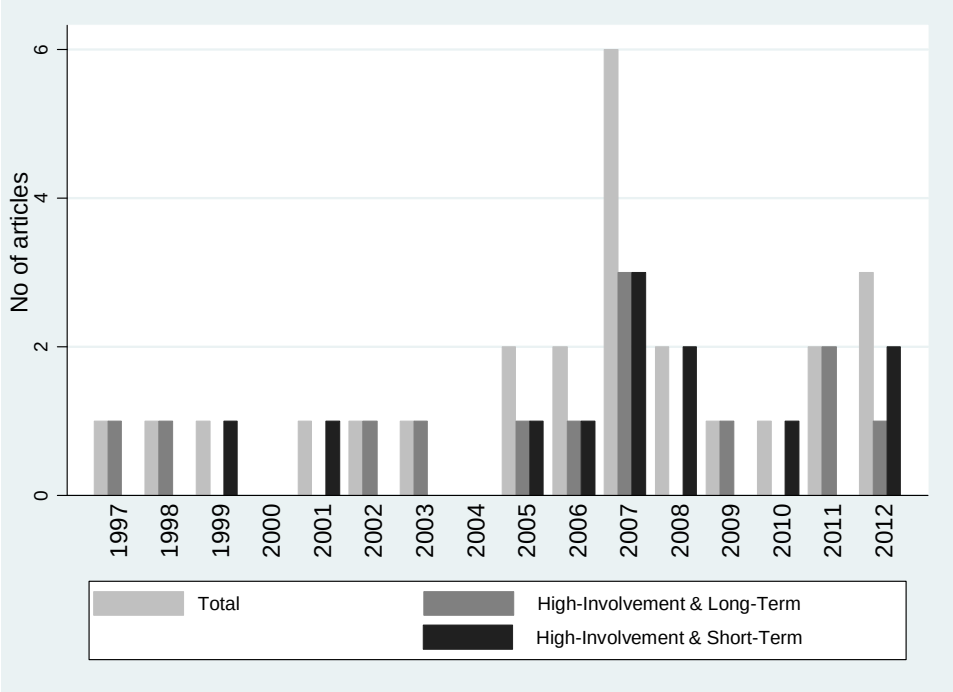
APPENDIX A 2 – Descriptive statistics of the selected articles

Number of articles by journal

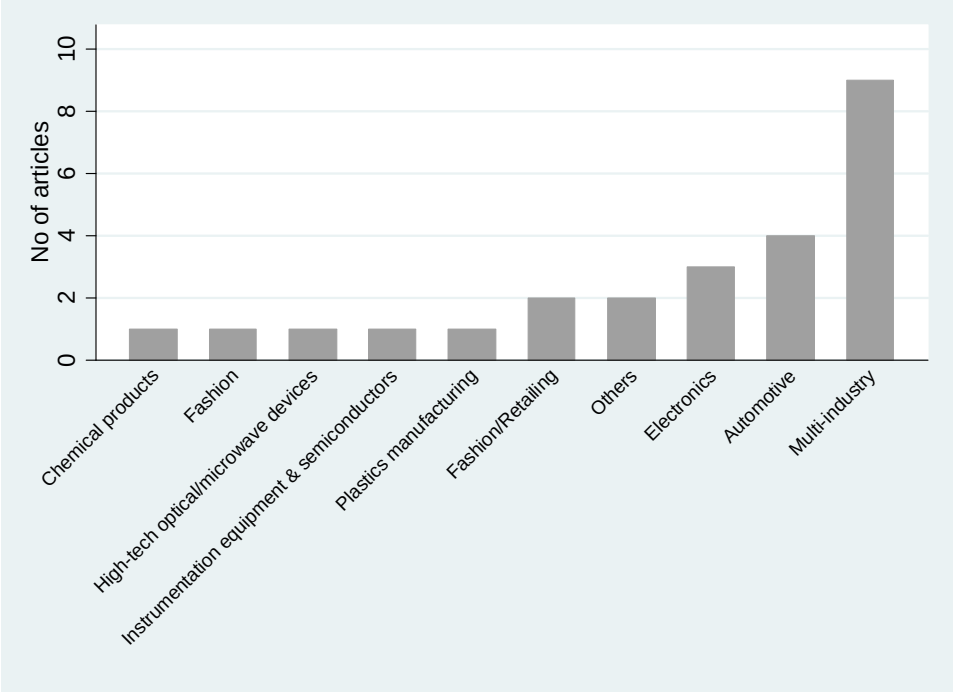
Journal	Journal rating	HI-LT	HI-ST	Total
Human Systems Management	n.a.	1	0	1
Industrial Marketing Management	3*	1	0	1
Industry & Innovation	2*	0	1	1
Int. Journal of Information Management	2*	0	1	1
Int. Journal of Logistics Management	2*	0	2	2
Int. Journal of Operations & Production Management	3*	3	3	6
Int. Journal of Production Economics	3*	1	0	1
Int. Journal of Purchasing & Materials Management	n.a.	1	0	1
Journal of Business Logistics	2*	1	0	1
Journal of Enterprise Information Management	1*	0	1	1
Journal of Fashion Marketing & Management	n.a.	0	1	1
Journal of Operations Management	4*	2	0	2
Journal of Supply Chain Management. A Global Review of Purchasing & Supply	1*	1	0	1
Management Decision	1*	1	1	2
Supply Chain Management	3*	1	1	2
Technovation	3*	0	1	1
Total		**13**	**12**	**25**

Notes: The Academic Journal Quality Guide (version 4; March 2010) by the Association of Business Schools (ABS) provides journal ratings

Number of articles by date of publication.



Number of articles by industry



Appendix B – Chapter 4

APPENDIX B 1 – Questionnaire used for the preliminary survey (translation into English – original in Italian)

Part I – General data on the company

1. Company name: _____

2. Turnover 2010 (in Million €) : _____

3. Turnover by geographic region (in percentage):
   - in Italy: ……... ___%
   - outside Italy……. ___%

4. Turnover by product segment (in percentage):
   - man …… ___%
   - woman …… ___%
   - children …… ___%

5. Turnover by brand type (in percentage):
   - own brand ...…… ___%
   - other _____ ___%

6. Footwear sales:
   - n. of pairs sold in the last spring/summer collection _____
   - n. of pairs sold in the last autumn/winter collection _____

Part II – Data on agility drivers

7. Features of footwear collections:
   - N. of items in the last S/S collection (including changes in colour/leather/accessories) ____
   - New items included in the last S/S collection (compared to the previous year) ____ %
   - N. of items in the last A/W collection (including changes in colour/leather/accessories) ___
   - New items included in the last A/W collection (compared to the previous year) ____ %

8. Non-traditional collections:
   - Relevance of non-traditional collection: ____ % of turnover
     [including intermediate/cruise collections, the second collections, refresh, …]

9. Retailer's orders timing (as % of turnover):
   - Before the beginning of the sales campaign _____ %
   - During the sales campaign _____ %
   - Replenishment orders _____ %

Part III – Data on agile capabilities

10. Activities' location choices (based on the output of pairs):
    - Prototypes/samples: ___ % made in the district
      ___ % made in Eastern Europe/North Africa/Turkey
      ___ % made in Far East (included China and India)
      ___ % made somewhere else
    - Cutting and sewing: ___ % made in the district
      ___ % made in Eastern Europe/North Africa/Turkey
      ___ % made in Far East (included China and India)
      ___ % made somewhere else
    - Shoes assembly: ___ % made in the district
      ___ % made in Eastern Europe/North Africa/Turkey
      ___ % made in Far East (included China and India)
      ___ % made somewhere else

11. Timing of sourcing and production launch decisions:
    - Purchases of leather: ___ % before the fashion fairs
      (% of the total value of leather's purchases) ___ % during or after the fashion fairs
    - Launch of production orders: ___ % before the fashion fairs
      (% of the total value of production orders) ___ % during or after the fashion fairs

APPENDIX B 2 - Protocol for the interviews to focal firms (translation into English – original in Italian)

Protocol for the first round of interviews

The interview protocol for the initial round of interviews is made of two sections

Section A will look at the three requisites of high-involvement:

- knowledge sharing (A.1 and A.2);
- relation-specific assets (A.3 and A.4);
- self-enforcement governance mechanisms (A.5 and A.6)

Section B will look at the reference time frame.

A. Questions on "high-involvement" supply relationships

Given that for knowledge and high-value information sharing we mean sharing non standard information as to the products and its manufacturing process and/or as to the company planning/delivery schedules as well as orders intake:

A.1: Do you share any knowledge and high-value information with suppliers?

A.2: Can you give me some examples of the knowledge and high-value information you have shared with selected suppliers?

Given that for relation-specific investments with a supplier we mean investments in machinery/IT system/procedures specially designed for a given supplier:

A.3: Have you committed relation-specific investments towards suppliers?

A.4: Can you give me some examples of the relation-specific investments you have committed towards selected suppliers?

Given that for trust-based agreements we mean agreements with suppliers that are either informal or relying on mutual trust more than on formal contractual conditions:

A.5: Have you developed trust-based agreement with suppliers?

A.6: Can you give me some examples of the trust-based agreements you have developed with selected suppliers?

B. Questions on time frame reference for “high-involvement” relationships

Given that we define the supply relationships characterized, as above described, by knowledge and information sharing, specific investments in the relationships and trust-based agreement as “high-involvement” relationships and that the time frame of these relationships can be expressed either in terms of time duration (weeks/months/years) or in terms of meaningful events that are defining the “industry clockspeed” (in our case the fashion season):

B.1: Have you developed “high-involvement” supply relationships with respect to both long-term and short-term?

B2: Could you name and briefly describe the “high-involvement & long-term” supply relationships your company has established?

B3: Could you name and briefly describe the “high-involvement & short-term” supply relationships your company has established?

Protocol for the second round of interviews

The second round of interviews will start with the companies' comments on the longitudinal data (when available) and then looks at why and how agile focal companies develop supply partnerships.

On each point the discussion will start in a general way and then focus on each of the four target supply categories.

Section A – Comments on the company supply strategy as it emerges from the longitudinal data

A.1 : What are your overall comments on the supply strategies that emerge in each supply category?

In particular

> Can you comment on the differences in terms of stability of the supply base?
>
> Can you comment on the differences in terms of concentration of the supply base?

A.2: What are the main elements that drove your company differentiate the supply relationship by product category

Section B - Reasons for developing supply partnerships

B.1 What are the factors in the competitive environment that are driving you to establish supply partnerships?

> In case, please detail any factor that might impact on the collection development process
>
> In case, please detail any factor that might impact on the production and delivery processes

B.2 Are these factors more relevant in any of the selected supply categories?

In case, please detail why, with respect to each supply category

In case these factors have involved particularly any specific supplier, please detail the situation

B.3 What are the performance targets driving you to establish supply partnerships?

In case, please detail any target that might impact on the collection development process

In case, please detail any target that might impact on the production and delivery processes

B.4 Are these targets more relevant in any of the selected supply categories?

In case, please detail why, with respect to each supply category

In case these factors have involved particularly any specific supplier, please detail the situation

APPENDIX B 3 – Coding used for assessing supply relationships variables

Coding used for assessing the supply relationships variables related to the degree of involvement

Construct	Indicators
Inter-firm knowledge sharing routine [The inter-firm knowledge sharing is evaluated in the two major phases of the seasonal collection launch: the collection development, where it refers to the contribution to product development and industrialisation; the production and delivery phase, where it refers to the collaboration in rescheduling of production and delivery plans.]	The frequency of the knowledge sharing is taken as reference for the coding on a 1-4 Likert scale: 4 = Very relevant: the supplier is always at the customer's premises during the peak period or the knowledge is exchanged daily or almost daily; 3 = Relevant: knowledge sharing during the peak period is taking place weekly; 2 = Limited: knowledge sharing is taking place only a few times during the peak period; 1 = None/irrelevant: almost no knowledge sharing is taking place.
Investment in relation-specific asset	The type of investment that is shared is taken as a reference for the coding on a 1-4 Likert scale, considering that different types of investment are quite related, also to the overall investment size: 4 = Very relevant: investment sharing having a major impact on the production processes of the supplier, i.e. when related to an important production equipment; 3 = Relevant: investment sharing mainly related to IT equipment for a better inter-firm connection; 2 = Limited: investment sharing referring to a tool (i.e. a mould) required for a specific customised item; 1 = None/irrelevant: no investment sharing is taking place.
Trust-based governance mechanism	The presence of a trust-based governance mechanism is coded taking into account the use of formal vs. informal agreements, on a 1-4 Likert scale: 4 = Very relevant: governance mechanism relying almost exclusively on an informal agreement with no written documents exchanged by the parties; 3 = Relevant: governance mechanism mainly informal (also with respect to controversies solution), however with written agreements that might be taken into consideration as a last resort; 2 = Limited: a mixed of formal and informal governance mechanisms with the parties making reference to the contract in case of major controversies, while solving informally the fine tuning of the contractual aspects, i.e. minor delivery time adjustments or minor changes in the production plan; 1 = None/irrelevant: governance mechanisms mainly (if not exclusively) based on formal agreements.

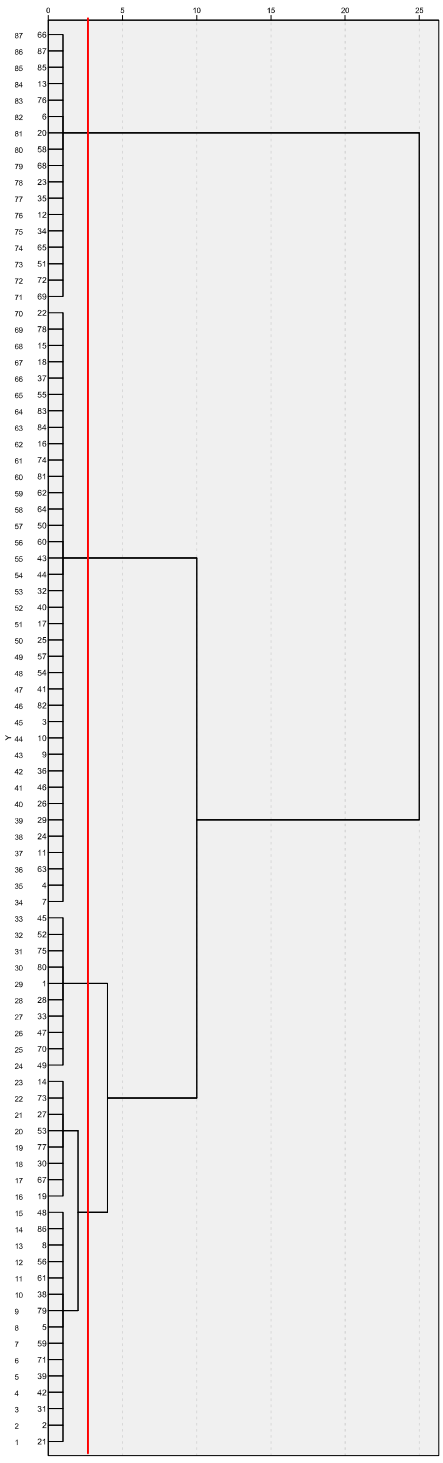
Coding used for assessing the supply relationships variables related to the duration of the supply relationship

Construct	**Indicators**
Length of the supply relationship	The length of the supply relationship, considered as length of uninterrupted sequence of purchasing orders assigned to a given supplier, has been coded on a 1-4 Likert scale: 4 = Long-term: a series of purchasing orders that runs with no interruptions across more than 5 years (ten seasons) irrespective of the fact that the single purchase order might refer to a single season; 3 = Mainly long-term: a series of purchasing orders that runs with no interruptions across a long period, between two and five years (four and nine seasons) irrespective of the fact that the single purchase order might refer to a single season; 2 = Mainly short-term: a series of purchasing orders that covers a quite short period, less than 2 years (two or three seasons) irrespective of the fact that the single purchase order might refer to a single season; 1 = Short-term: a spot purchase order that covers no longer than one season.
Stability of the supply relationship	The stability of the supply relationship, in terms of lack of volatility in the volume of the purchasing orders assigned to a given supplier, has been coded on a 1-4 Likert scale: 4 = Very high: a stability in the percentage of purchase assigned to each main supplier within a given supply category, a stability that is not affected by fashion trends but that might be affected only by supplier underperformance; 3 = Quite high: a relative stability in the percentage of purchase assigned to each main supplier within a given supply category, a stability that is affected by fashion trends only to a moderate extent; 2 = Quite low: a fluctuating percentage of purchase orders assigned to each main supplier within a given supply category, fluctuation that is unrelated to supplier performance and mainly linked to fashion trends change; 1 = Very low: a very fluctuating percentage of purchase orders assigned to each main supplier within a given supply category, fluctuation that is unrelated to supplier performance and mainly linked to fashion trends change.

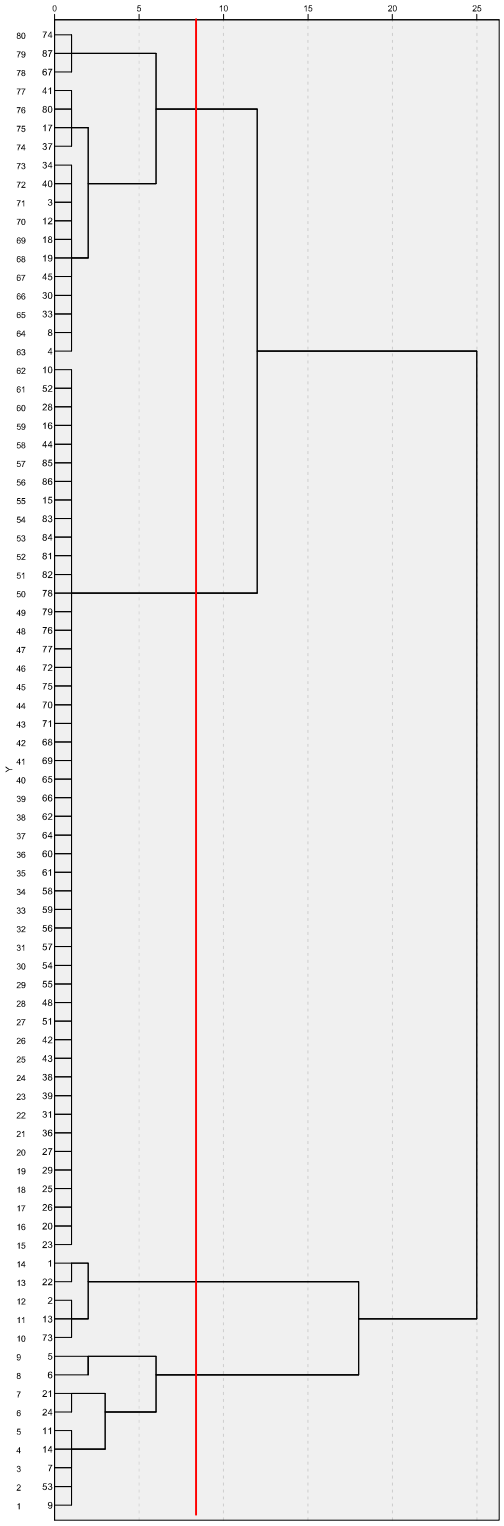
Appendix C – Chapter 5

Two dendograms (one for each cluster analysis carried out) are reported here below. They show the distribution of the survey data across the four clusters, highlighting how in each case there has been one cluster including the largest part of the observations.

APPENDIX C 1 - Dendogram - Clusters by agility drivers



APPENDIX C 2 - Dendogram - Clusters by agile capabilities



Appendix D - Chapter 6

APPENDIX D 1 - Company A: purchases of external leather (in % of annual total cost of external leather)

Supplier Code	2012	2011	2010	2009	2008	2007	2006	2005
Supplier Comp.A-EL 1	33.91%	29.68%	18.27%	11.23%	13.46%	11.08%		
Supplier Comp.A-EL 2	29.16%	37.52%	38.97%	39.21%	38.84%	38.81%	46.32%	47.37%
Supplier Comp.A-EL 3	9.36%	3.72%	12.79%	0.99%				
Supplier Comp.A-EL 4	8.15%	7.70%	1.53%					
Supplier Comp.A-EL 5	5.18%	6.39%	7.93%	8.79%	9.18%	3.30%	4.08%	3.91%
Supplier Comp.A-EL 6	4.88%	2.43%	3.97%	0.37%				
Supplier Comp.A-EL 7	4.55%	0.50%		9.48%	16.17%	13.00%	5.63%	
Supplier Comp.A-EL 8	1.66%	1.88%	3.75%	3.32%	3.33%	3.64%		
Supplier Comp.A-EL 9	0.68%							
Supplier Comp.A-EL 10	0.44%	1.47%						
Supplier Comp.A-EL 11	0.43%	0.66%	0.95%	0.33%				
Supplier Comp.A-EL 12	0.36%							
Supplier Comp.A-EL 13	0.28%	2.35%						
Supplier Comp.A-EL 14	0.24%		0.12%	0.05%		0.21%		
Supplier Comp.A-EL 15	0.17%							
Supplier Comp.A-EL 16	0.15%	0.71%	0.49%		0.45%	5.72%	2.66%	
Supplier Comp.A-EL 17	0.12%	1.34%	4.01%	1.96%	0.15%			
Supplier Comp.A-EL 18	0.12%	0.09%		0.27%				
Supplier Comp.A-EL 19	0.09%							
Supplier Comp.A-EL 20	0.06%	0.24%		0.10%	0.66%	0.93%		
Supplier Comp.A-EL 21		1.16%	0.78%	0.55%	0.84%	0.62%		
Supplier Comp.A-EL 22		0.51%						
Supplier Comp.A-EL 23		0.24%						0.17%
Supplier Comp.A-EL 24		0.21%						
Supplier Comp.A-EL 25		0.21%	2.30%	1.50%				

Supplier Comp.A-EL 26		0.19%	0.20%	0.91%	0.40%			
Supplier Comp.A-EL 27		0.18%						
Supplier Comp.A-EL 28		0.15%		0.22%				
Supplier Comp.A-EL 29		0.14%	0.34%	0.27%	0.49%			
Supplier Comp.A-EL 30		0.13%	1.11%	1.01%	0.21%		0.18%	
Supplier Comp.A-EL 31		0.11%					0.49%	
Supplier Comp.A-EL 32		0.06%						
Supplier Comp.A-EL 33		0.06%						
Supplier Comp.A-EL 34			1.07%					
Supplier Comp.A-EL 35			0.57%	0.06%		0.40%		
Supplier Comp.A-EL 36			0.16%					
Supplier Comp.A-EL 37			0.15%		0.10%	0.43%		
Supplier Comp.A-EL 38			0.15%					
Supplier Comp.A-EL 39			0.12%	0.07%		0.15%	1.10%	
Supplier Comp.A-EL 40			0.08%					
Supplier Comp.A-EL 41			0.06%	0.16%				
Supplier Comp.A-EL 42			0.06%	0.54%				0.16%
Supplier Comp.A-EL 43			0.05%	0.27%				
Supplier Comp.A-EL 44			0.04%	0.09%				
Supplier Comp.A-EL 45				5.30%	6.35%	7.42%	2.93%	
Supplier Comp.A-EL 46				3.83%	1.32%		1.14%	3.05%
Supplier Comp.A-EL 47				2.52%	0.16%			
Supplier Comp.A-EL 48				1.33%				
Supplier Comp.A-EL 49				0.91%				
Supplier Comp.A-EL 50				0.83%				0.50%
Supplier Comp.A-EL 51				0.51%				
Supplier Comp.A-EL 52				0.40%	0.44%	2.76%	2.08%	1.81%
Supplier Comp.A-EL 53				0.33%	3.28%	0.16%	0.34%	0.61%
Supplier Comp.A-EL 54				0.33%				

Supplier Comp.A-EL 55				0.29%				
Supplier Comp.A-EL 56				0.26%				
Supplier Comp.A-EL 57				0.25%				
Supplier Comp.A-EL 58				0.21%				
Supplier Comp.A-EL 59				0.19%				
Supplier Comp.A-EL 60				0.15%	0.88%			
Supplier Comp.A-EL 61				0.14%				2.62%
Supplier Comp.A-EL 62				0.13%	0.69%			
Supplier Comp.A-EL 63				0.12%		1.41%	4.43%	0.49%
Supplier Comp.A-EL 64				0.12%				
Supplier Comp.A-EL 65				0.07%	0.87%			
Supplier Comp.A-EL 66				0.05%	0.06%			
Supplier Comp.A-EL 67					0.56%			
Supplier Comp.A-EL 68					0.30%	3.25%	0.75%	
Supplier Comp.A-EL 69					0.22%			
Supplier Comp.A-EL 70					0.15%			
Supplier Comp.A-EL 71					0.13%			
Supplier Comp.A-EL 72					0.12%	0.91%		
Supplier Comp.A-EL 73					0.09%	0.19%		2.05%
Supplier Comp.A-EL 74					0.06%	0.77%		
Supplier Comp.A-EL 75					0.04%			
Supplier Comp.A-EL 76					0.56%			
Supplier Comp.A-EL 77					0.30%	3.25%	0.75%	
Supplier Comp.A-EL 78					0.22%			
Supplier Comp.A-EL 79					0.15%			
Supplier Comp.A-EL 80					0.13%			
Supplier Comp.A-EL 81					0.12%	0.91%		
Supplier Comp.A-EL 82					0.09%	0.19%		2.05%
Supplier Comp.A-EL 83					0.06%	0.77%		

Supplier Comp.A-EL 84					0.04%			
Supplier Comp.A-EL 85						1.97%		
Supplier Comp.A-EL 86						1.03%	0.88%	0.86%
Supplier Comp.A-EL 87						0.79%	1.24%	
Supplier Comp.A-EL 88						0.27%		
Supplier Comp.A-EL 89						0.21%		
Supplier Comp.A-EL 90						0.19%	3.94%	0.93%
Supplier Comp.A-EL 91						0.10%	0.33%	
Supplier Comp.A-EL 92						0.10%		
Supplier Comp.A-EL 93						0.09%	0.15%	2.51%
Supplier Comp.A-EL 94						0.05%	1.51%	
Supplier Comp.A-EL 95						0.05%		
Supplier Comp.A-EL 96							6.11%	10.02%
Supplier Comp.A-EL 97							4.73%	3.18%
Supplier Comp.A-EL 98							2.55%	0.19%
Supplier Comp.A-EL 99							1.31%	0.67%
Supplier Comp.A-EL 100							0.92%	1.00%
Supplier Comp.A-EL 101							0.84%	1.02%
Supplier Comp.A-EL 102							0.71%	1.05%
Supplier Comp.A-EL 103							0.63%	1.56%
Supplier Comp.A-EL 104							0.33%	
Supplier Comp.A-EL 105							0.32%	0.52%
Supplier Comp.A-EL 106							0.24%	
Supplier Comp.A-EL 107							0.22%	
Supplier Comp.A-EL 108							0.20%	
Supplier Comp.A-EL 109							0.20%	
Supplier Comp.A-EL 110							0.18%	
Supplier Comp.A-EL 111							0.13%	
Supplier Comp.A-EL 112							0.12%	

Supplier Comp.A-EL 113							0.09%	
Supplier Comp.A-EL 114								3.19%
Supplier Comp.A-EL 115								1.89%
Supplier Comp.A-EL 116								1.47%
Supplier Comp.A-EL 117								1.42%
Supplier Comp.A-EL 118								1.05%
Supplier Comp.A-EL 119								1.01%
Supplier Comp.A-EL 120								0.88%
Supplier Comp.A-EL 121								0.62%
Supplier Comp.A-EL 122								0.53%
Supplier Comp.A-EL 123								0.48%
Supplier Comp.A-EL 124								0.44%
Supplier Comp.A-EL 125								0.37%
Supplier Comp.A-EL 126								0.20%
Supplier Comp.A-EL 127								0.12%
Supplier Comp.A-EL 128								0.11%

APPENDIX D 2 – Company A: purchases of internal leather (in % of annual total cost of internal leather)

Supplier Code	2012	2011	2010	2009	2008	2007	2006	2005
Supplier Comp.A-IL 1	64.70%	61.72%	46.02%	1how6%	10.65%			
Supplier Comp.A-IL 2	18.32%	14.65%	7.92%	19.13%	26.65%	65.40%	60.64%	23.33%
Supplier Comp.A-IL 3	11.81%	21.23%	6.46%	13.95%				
Supplier Comp.A-IL 4	2.68%							
Supplier Comp.A-IL 5	2.49%							
Supplier Comp.A-IL 6		1.41%	11.15%	17.18%		0.21%	1.59%	4.46%
Supplier Comp.A-IL 7		0.60%		0.45%				
Supplier Comp.A-IL 8		0.39%	4.78%	6.51%				
Supplier Comp.A-IL 9			18.29%	11.19%				
Supplier Comp.A-IL 10			5.38%					
Supplier Comp.A-IL 11				6.93%		0.61%		
Supplier Comp.A-IL 12				3.36%	6.54%			
Supplier Comp.A-IL 13				2.05%	7.54%	7.99%	13.12%	1.53%
Supplier Comp.A-IL 14				1.38%				
Supplier Comp.A-IL 15				1.31%		6.10%	2.76%	45.87%
Supplier Comp.A-IL 16				0.76%	8.48%			
Supplier Comp.A-IL 17				0.27%				
Supplier Comp.A-IL 18				0.25%	1.26%	9.69%	7.55%	6.56%
Supplier Comp.A-IL 19				0.25%				
Supplier Comp.A-IL 20				0.20%				
Supplier Comp.A-IL 21				0.19%	0.32%			
Supplier Comp.A-IL 22				0.15%				
Supplier Comp.A-IL 23				0.14%				1.24%
Supplier Comp.A-IL 24					21.49%	6.78%		
Supplier Comp.A-IL 25					5.74%	0.53%		
Supplier Comp.A-IL 26					3.00%	0.73%		

Supplier Comp.A-IL 27					2.87%	0.93%		
Supplier Comp.A-IL 28					2.83%			
Supplier Comp.A-IL 29					2.31%	0.40%		
Supplier Comp.A-IL 30					0.33%			
Supplier Comp.A-IL 31						0.32%		
Supplier Comp.A-IL 32						0.32%		
Supplier Comp.A-IL 33							9.77%	
Supplier Comp.A-IL 34							2.40%	
Supplier Comp.A-IL 35							1.85%	
Supplier Comp.A-IL 36							0.32%	
Supplier Comp.A-IL 37								7.06%
Supplier Comp.A-IL 38								5.06%
Supplier Comp.A-IL 39								4.89%

APPENDIX D 3 – Company A: purchases of leather soles (in % of annual total cost of leather soles)

Supplier Code	2012	2011	2010	2009	2008	2007	2006	2005
Supplier Comp.A-LS 1	42.50%	69.43%	44.89%	45.73%	42.82%	63.75%		
Supplier Comp.A-LS 2	17.12%	6.80%	19.53%	32.15%	17.39%	1.47%		
Supplier Comp.A-LS 3	13.60%	1.20%	2.37%	1.93%				
Supplier Comp.A-LS 4	11.37%	6.93%	0.32%					
Supplier Comp.A-LS 5	6.86%		1.11%	1.19%	3.33%	3.50%		
Supplier Comp.A-LS 6	4.49%	10.17%	22.49%	5.66%	12.87%	8.09%		
Supplier Comp.A-LS 7	2.98%	2.61%	3.09%	2.13%				
Supplier Comp.A-LS 8	1.08%	1.57%	4.48%	2.38%	10.21%			
Supplier Comp.A-LS 9		1.29%	1.73%	2.22%				
Supplier Comp.A-LS 10				6.09%				
Supplier Comp.A-LS 11				0.52%	10.40%	12.16%		
Supplier Comp.A-LS 12					1.69%	6.26%	26.78%	
Supplier Comp.A-LS 13					1.29%	2.01%		6.00%
Supplier Comp.A-LS 14						2.76%	65.20%	94.00%
Supplier Comp.A-LS 15							5.87%	
Supplier Comp.A-LS 16							2.15%	

APPENDIX D 4 – Company A: purchases of non-leather soles (in % of annual total cost of non-leather soles)

Supplier Code	2012	2011	2010	2009	2008	2007	2006	2005
Supplier Comp.A-NLS 1	64.77%	70.23%	86.11%	77.61%	59.52%	87.68%	85.40%	91.20%
Supplier Comp.A-NLS 2	9.64%	6.10%		0.69%				
Supplier Comp.A-NLS 3	7.09%	12.16%	3.94%	10.71%	17.55%	9.30%	3.69%	4.65%
Supplier Comp.A-NLS 4	6.55%	1.62%						
Supplier Comp.A-NLS 5	3.84%	0.32%						
Supplier Comp.A-NLS 6	2.52%	1.75%						
Supplier Comp.A-NLS 7	2.13%	0.47%	1.57%					
Supplier Comp.A-NLS 8	1.28%	2.83%	2.09%	9.93%	15.67%	3.02%	10.91%	2.77%
Supplier Comp.A-NLS 9	0.99%	0.16%	1.84%					
Supplier Comp.A-NLS 10	0.62%	0.67%						
Supplier Comp.A-NLS 11	0.59%	0.67%						
Supplier Comp.A-NLS 12		2.29%	4.43%	1.06%	1.08%			
Supplier Comp.A-NLS 13		0.50%						
Supplier Comp.A-NLS 14		0.25%						
Supplier Comp.A-NLS 15					2.89%			
Supplier Comp.A-NLS 16					3.28%			
Supplier Comp.A-NLS 17								1.38%

APPENDIX D 5 – Company B: purchases of external leather (in % of annual total cost of external leather)

Supplier Code	2012	2011	2010	2009	2008	2007	2006	2005
Supplier Comp.B-EL 1	14.18%							
Supplier Comp.B-EL 2	12.64%	10.04%						
Supplier Comp.B-EL 3	11.95%							
Supplier Comp.B-EL 4	11.23%	25.72%	55.48%	68.03%	80.36%	68.31%	38.28%	43.02%
Supplier Comp.B-EL 5	8.96%		0.58%	0.07%				
Supplier Comp.B-EL 6	6.98%	2.57%						
Supplier Comp.B-EL 7	5.74%	14.66%	0.18%					
Supplier Comp.B-EL 8	5.02%	4.47%	5.70%					
Supplier Comp.B-EL 9	4.75%	0.08%	0.83%					
Supplier Comp.B-EL 10	3.69%	5.68%	12.26%	19.92%	13.52%	29.69%	42.79%	13.01%
Supplier Comp.B-EL 11	3.50%							
Supplier Comp.B-EL 12	3.38%							
Supplier Comp.B-EL 13	2.76%							
Supplier Comp.B-EL 14	1.83%	3.20%	1.54%					
Supplier Comp.B-EL 15	1.44%	0.33%	5.05%	4.08%				
Supplier Comp.B-EL 16	0.60%	1.72%	6.54%					
Supplier Comp.B-EL 17	0.48%	7.87%						
Supplier Comp.B-EL 18	0.42%							
Supplier Comp.B-EL 19	0.24%							
Supplier Comp.B-EL 20	0.13%							5.31%
Supplier Comp.B-EL 21	0.05%							
Supplier Comp.B-EL 22	0.04%							
Supplier Comp.B-EL 23		10.69%		0.28%				
Supplier Comp.B-EL 24		8.89%						
Supplier Comp.B-EL 25		1.01%						
Supplier Comp.B-EL 26		0.98%						

Supplier Comp.B-EL 27		0.66%						
Supplier Comp.B-EL 28		0.59%			2.33%			
Supplier Comp.B-EL 29		0.34%						
Supplier Comp.B-EL 30		0.34%	0.61%					
Supplier Comp.B-EL 31		0.18%						
Supplier Comp.B-EL 32		0.01%	1.30%					
Supplier Comp.B-EL 33			6.53%	0.09%		0.12%	7.04%	
Supplier Comp.B-EL 34			2.54%					
Supplier Comp.B-EL 35			0.46%	1.29%				
Supplier Comp.B-EL 36			0.25%					
Supplier Comp.B-EL 37			0.05%					
Supplier Comp.B-EL 38			0.04%					
Supplier Comp.B-EL 39			0.04%					
Supplier Comp.B-EL 40			0.03%					
Supplier Comp.B-EL 41				3.77%				
Supplier Comp.B-EL 42				1.24%				
Supplier Comp.B-EL 43				1.22%				
Supplier Comp.B-EL 44					3.06%	0.10%	7.30%	11.50%
Supplier Comp.B-EL 45					0.73%		0.18%	8.77%
Supplier Comp.B-EL 46						1.78%		
Supplier Comp.B-EL 47							4.29%	16.88%
Supplier Comp.B-EL 48							0.11%	
Supplier Comp.B-EL 49								1.11%
Supplier Comp.B-EL 50								0.41%

APPENDIX D 6 – Company B: purchases of internal leather (in % of annual total cost of internal leather)

Supplier Code	2012	2011	2010	2009	2008	2007	2006	2005
Supplier Comp.B-IL 1	48.59%	53.84%	64.40%	66.59%	50.14%	62.77%	74.12%	85.54%
Supplier Comp.B-IL 2	28.60%	11.86%			3.32%			
Supplier Comp.B-IL 3	15.93%	32.50%	35.60%	33.41%	43.53%	37.23%	25.88%	14.46%
Supplier Comp.B-IL 4	6.88%	1.81%						
Supplier Comp.B-IL 5					2.09%			
Supplier Comp.B-IL 6					0.92%			

APPENDIX D 7 – Company B: purchases of non-leather soles (in % of annual total cost of non-leather soles)

Supplier Code	2012	2011	2010	2009	2008	2007	2006	2005
Supplier Comp.B-NLS 1	29.01%	8.83%	15.20%	18.74%	12.92%	2.12%		
Supplier Comp.B-NLS 2	19.01%	30.74%	20.02%	19.39%	20.20%	22.76%	11.33%	18.79%
Supplier Comp.B-NLS 3	10.42%	22.14%	23.78%	25.85%	15.75%	23.81%	10.68%	2.04%
Supplier Comp.B-NLS 4	9.71%	11.23%	1.51%	2.02%				
Supplier Comp.B-NLS 5	7.61%	8.72%	6.14%	2.92%				
Supplier Comp.B-NLS 6	6.64%		7.42%	3.41%	6.61%	6.49%		7.90%
Supplier Comp.B-NLS 7	4.95%	1.05%						
Supplier Comp.B-NLS 8	4.38%	5.33%	9.28%	6.47%	4.81%			
Supplier Comp.B-NLS 9	2.85%							
Supplier Comp.B-NLS 10	2.68%	1.49%	0.02%					
Supplier Comp.B-NLS 11	1.44%							
Supplier Comp.B-NLS 12	0.93%	5.20%	4.16%		1.71%	1.99%		
Supplier Comp.B-NLS 13	0.19%	2.79%	8.84%	20.63%	29.06%	23.70%	17.62%	11.26%
Supplier Comp.B-NLS 14	0.15%							
Supplier Comp.B-NLS 15	0.04%							
Supplier Comp.B-NLS 16		0.93%						1.84%
Supplier Comp.B-NLS 17		0.90%						
Supplier Comp.B-NLS 18		0.50%						
Supplier Comp.B-NLS 19		0.11%	0.23%	0.56%	1.85%	3.82%	2.70%	5.59%
Supplier Comp.B-NLS 20		0.02%	0.03%					1.38%
Supplier Comp.B-NLS 21			1.31%				0.24%	0.06%
Supplier Comp.B-NLS 22			1.10%		2.59%	10.64%	4.81%	13.00%
Supplier Comp.B-NLS 23			0.96%					1.10%
Supplier Comp.B-NLS 24					2.69%	2.84%	47.26%	
Supplier Comp.B-NLS 25					1.75%			
Supplier Comp.B-NLS 26					0.06%	0.21%		

Supplier Comp.B-NLS 27						1.63%	0.98%	
Supplier Comp.B-NLS 28							1.78%	12.56%
Supplier Comp.B-NLS 29							1.20%	
Supplier Comp.B-NLS 30							0.74%	
Supplier Comp.B-NLS 31							0.66%	0.56%
Supplier Comp.B-NLS 32							0.00%	
Supplier Comp.B-NLS 33								7.90%
Supplier Comp.B-NLS 34								4.69%
Supplier Comp.B-NLS 35								3.55%
Supplier Comp.B-NLS 36								2.79%
Supplier Comp.B-NLS 37								2.35%
Supplier Comp.B-NLS 38								1.76%
Supplier Comp.B-NLS 39								0.81%
Supplier Comp.B-NLS 40								0.07%